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ABSTRACT

Intended to help developers of early intervention programs for children with developmental disabilities, the book provides philosophy, methods, and procedures based on experiences of the Child Development Center of the University of Tennessee Center for Health Sciences. The first section presents a program description including information on program philosophy, the target population, composition of the program team, and the program's facility and schedule. The second section describes sample intervention activities for the following areas of child development: sensory, somatosensory, and vestibular systems; self-help skills; social skills; behavior management; gross motor skills; fine motor skills; oral motor development; language skills; health care; nutrition; daily routine; play and toys; and music. The third section is on family involvement with discussion of parent therapy groups, sibling therapy groups, and grandparent/extended family support groups. The last section provides three case studies of children served by the program. Appendixes include the "Gesell Motor Development Scale: Physical Therapy Evaluation," forms for recording data for nutritional follow-up; and an outline of the nutritionist's role in early intervention. A list of additional reading concludes the document. (DB)

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INTERDISCIPLINARY EARLY INTERVENTION

FOR

DEVELOPMENTALLY DELAYED INFANTS AND YOUNG CHILDREN

A FAMILY-ORIENTED APPROACH

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October 1985

Child Development Center

University of Tennessee Center for the Health Sciences

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TABLE OF CONTENTS

Foreword vii

Introduction xi

1 Program Description 1

- Philosophy 1
- Target Group 1
- Early Intervention Program Team 2
- Setting 2
- Schedule 2

2 Program Areas 3

- Sensory, Somatosensory, and Vestibular Systems 3
- Self-Help Skills 19
- Social Skills 28
- Behavior Management 33
- Gross Motor Skills 36
- Fine Motor Skills 52
- Oral Motor Development 61
- Language Skills 63
- Health Care 66
- Nutrition 66
- Daily Routine 68
- Play and Toys 71
- Music 74
- References 75

3 Family Involvement 77

- Parent Therapy Groups 77
- Sibling Therapy Groups 83
- Grandparent and Extended Family Support Groups 87
- References 93

4 Case Studies 97

- Case Study One 97
- Case Study Two 103
- Case Study Three 109

Appendix 1 Gesell Motor Development Scale: Physical Therapy Evaluation 115

Appendix 2 Nutrition Follow-Up Data 123

Appendix 3 Role of the Nutritionist 125

Additional Reading 127

FOREWORD

Early intervention programs for handicapped infants have become a highly visible part of the service network for developmentally delayed children. Although these programs have all grown from the central philosophy that the impact of handicapping conditions can be minimized by early treatment, the approaches taken and the methods used have varied widely from "fix the baby" programs to others that are mainly parent support groups and in which the needs of the child appear to be secondary.

The literature concerning the effectiveness of these programs is difficult to interpret. This is partially the result of the diversity of handicapping conditions being treated. The difficulty is also a function of the many variations found in the structure and function of these programs. Convincing data on their long-term effectiveness have only recently been accumulated.

This text is not meant to be a guidebook that will allow any interested group to quickly develop its own early intervention program. Rather, it provides philosophy, methods, and procedures that need to be considered carefully when such programs are developed. It does this, however, without neglecting the specific techniques that have been found useful.

The book presents the collective ideas and experience of a group of professionals who were able to initiate a successful program, conceptualize its underlying philosophy, and develop a broad range of effective treatment techniques. Their experience is presented in such a way that others can benefit from it.

Finally, although a family-oriented approach is clearly taken, a balance has been struck with the exposition of methods that can be used with the child. It is the ability to tie the practical aspects of the treatment program into the philosophical and conceptual framework that gives this book its unique flavor and exceptional value.

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INTRODUCTION

The number of early intervention programs for preschool children, developed to prevent or remediate developmental disabilities, has increased since the 1960s. Professionals in many disciplines now believe that therapeutic intervention for infants and young children at risk for or manifesting developmental delays beneficially affects the development of these children and their families.

The Child Development Center (CDC) of the University of Tennessee Center for the Health Sciences is one of the original university affiliated facilities (UAF) established in the 1960s. Today, more than 50 UAFs are located in university settings across the country. The federal government mandated that these facilities provide interdisciplinary manpower training, develop exemplary service models, and disseminate research as these activities relate to developmental disabilities. The early intervention concept is in concert with each of these mandates. The CDC joined the early intervention movement in 1973 by establishing an Early Intervention Program (EIP) as a specialty treatment and training unit.

The principles developed by the National Collaborative Infant Project funded by the Bureau of Education for the Handicapped served as an initial guide for the EIP:

1. Support services should be given to the entire family early.
2. Services offered should be based on the needs of the child and family rather than on the diagnosis.
3. Programs should be family-oriented rather than child-oriented.
4. Programs should support and encourage parent-child interactions.
5. Programs should be ongoing.

The CDC program expanded and redefined these principles during the past decade to describe early intervention as a process. To be most effective, the process must

- Begin early, preferably within the first 6 months of life
- Involve the child's immediate and extended family
- Have credentialed professionals responsible for the program's operation
- Involve a team representing a variety of disciplines

The children targeted by this program are those at risk for developmental disabilities. The definition of "developmental disability" was embodied in Public Law 95-602, signed in 1978:

"Developmental disability" refers to a severe chronic disability that

- Is attributable to a mental or physical impairment or combination of mental and physical impairments
- Is manifested before the person attains age 22
- Is likely to continue indefinitely
- Results in substantial functional limitations in three or more of the following areas of major life activity: self-care, receptive and expressive language, capacity for independent living, and economic sufficiency
- Reflects the person's need for a combination and sequence of special, interdisciplinary, or generic care, treatment, or other services that are of lifelong or extended duration and are individually planned and coordinated

This law expanded the criteria for those individuals who should be eligible for services by describing functional limitations rather than listing diagnostic categories in its definition. Children who once were without needed services because of the medical community's inability to elucidate an etiology for their observed delays in development were now eligible for services.

Since 1973, the faculty of this EIP have been active in documenting the effectiveness of the program. Follow-up studies of EIP participants with Down syndrome underscore the program's success. This book was prepared to present CDC's program to a growing audience of interested professionals and students. Dissemination of successful models to the community is a natural and necessary step in the advancement of services to families of children with developmental delays.

This book will provide the reader with a program overview including the philosophy, target group, faculty, setting, and schedule. A description of each of the major program areas, which include somatosensory and vestibular systems, self-help skills, social skills, behavior management, gross motor, fine motor, oral motor, language, health care, and nutrition, is provided. Research on these program areas is widely documented in the literature; consequently, background literature is not extensively reviewed.

The chapter on family involvement is more extensive because of the new and exciting approaches the EIP faculty have developed. The program's initial focus on children and parents was expanded to include siblings, extended family members, and close friends. This widened focus has had far-reaching, positive effects and represents previously untapped resources.

Case descriptions give an integrated overview of initial assessment and program plans developed for each child.

A videotape accompanying this book transports the reader into our classrooms to see and hear from the authors firsthand. The pairing of print and visual media is an exciting approach to the dissemination of this program to the community.

1. PROGRAM DESCRIPTION

PHILOSOPHY

The philosophy of the Early Intervention Program at the University of Tennessee has not changed drastically over the years. Our goals are the same; only the methods have improved. Staff have been added with time and available funds, but the aims of the program have remained essentially unchanged. The team members have always shared the following beliefs:

- Families who have children with developmental delays or potential delays need professional help in coping with their feelings, in parenting the special child, in changing or modifying their attitudes about handicapping conditions, and in obtaining information about their child's problem.
- The interdisciplinary process provides the framework for the most effective and comprehensive intervention for families who have children with developmental delays. Because of the complexity of dealing with the families, the collective decision-making of the entire team has been very helpful.
- Support to parents is a vital aspect of the program. Parent groups with professional leadership offer opportunities for parents of children with developmental delays to interact (share concerns, ventilate and deal with feelings, and solve problems) and to augment the child's growth and learning. Extended family groups are also necessary to aiding families.
- To be effective, intervention, which is a training program, must be a joint effort between parents and professionals. Professionals demonstrate the activity to the parents with the child and then ask the parents to carry out the activity. Verbal feedback is given by the professional to make the parents confident in using the techniques. Handouts also reinforce the tasks. A basic premise is that parents are the most important stimulator for the child. Because they are the daily care providers, parents do the majority of the hands-on work during the program with supervision from the professionals.
- Early intensive sensorimotor stimulation geared to the level of the individual child enhances development, maximizes abilities, and provides the parents with opportunities to help the child. The earlier intervention is begun, the better the long-term functioning. Individuality of the parents and child is respected and maintained.

TARGET GROUP

Referrals come from several sources. Primary sources include geneticists, pediatricians, social and health agencies, and the Child Development Center faculty. Occasionally parents seeking help on their own will bring their child. In our community, the Down's Parents of Memphis, Inc., is a very active group and a valuable resource for referrals.

Criteria for referral include infants and children from birth to 3 years who have developmental delays and whose families are both able and willing to participate in the diagnostic evaluation performed by the Center and in the Early Intervention Program. A recent medical, nursing, physical therapy, nutrition, audiology, and social work evaluation performed before enrollment is most important. It is advantageous to have a baseline of medical knowledge about the child and social knowledge of the family to meet most effectively that family's needs. The evaluation is also helpful for parents because it helps answer questions regarding the child's condition prior to participation.

The majority of our participants have been children with Down syndrome. We have also enrolled children with other chromosomal abnormalities, inborn errors of metabolism, neuromotor dysfunction, and developmental delay from unknown causes.

EARLY INTERVENTION PROGRAM TEAM

While the Department of Nursing assumes responsibility for coordinating the Early Intervention Program, the departments of physical therapy, social work, nutrition, and speech pathology are also actively involved. Consultants include audiologists, occupational therapists, pediatricians, dentists, and psychologists. Referrals for special consultation are sent to genetics, pediatric neurology, otolaryngology, ophthalmology, and rehabilitation engineering.

We rely heavily on volunteers from the community to hold, comfort, feed, and work with the children. Because we are a training facility, students are part of the team and are integrated into the framework of the program as their discipline and level of training allow.

SETTING

The Early Intervention Program is held in the University of Tennessee Center for the Health Sciences Child Development Center. Intervention takes place in three brightly painted rooms with open access to one another. The rooms are equipped with mirrors at floor level, large mats, highchairs or small tables and chairs, rails on the walls for standing, storage space for diapers and clothing, and a variety of developmental toys. The largest of the three rooms, the infant room, contains rocking chairs, a record player, and musical instruments.

A small play area adjacent to the three rooms has larger play equipment such as a trampoline, sandbox, slides, and a tunnel. The University of Tennessee allows use of its indoor pool for swimming in the summer for a small fee.

Parent groups meet in rooms furnished with comfortable seating and access to coffee or snacks for a more relaxed setting. Observation windows are available for students or faculty as necessary. The rooms are also accessible for videotaping as required for teaching purposes.

SCHEDULE

Early Intervention Program sessions run for 9 to 12 weeks each spring and fall. Breaks at Thanksgiving and Easter allow families to vacation. A 6-week summer program emphasizes therapeutic water play. At the end of each group of sessions, a parent conference is scheduled with each family to provide closure and additional activities and goals for the interim period. A faculty meeting is held before and after each group of sessions to plan the most effective intervention strategies to meet the needs of those enrolled and to establish recommendations for each family. If necessary, individual services from specific medical disciplines may be provided to the families when the program is not meeting.

Each session consists of a weekly half-day meeting on Thursday. The session begins at 9:00 a.m. and ends at 11:45 a.m. The first 40 minutes center on parent training with different professionals leading. The next 20 minutes are devoted to music and snacks. All the families assemble in the large room for music which allows time for the families to mingle with those in other child or parent groups. Snacks are provided after music time. Families spend the following hour in parent or relative groups while the children receive individual therapy from professionals and also have time to rest. Lunch time, which emphasizes feeding skills and oral development, wraps up the last 30 minutes for the families. The team, however, meets for a lunch conference to discuss the activities of the day and to plan for the next week. This is a very valuable meeting that links the day's activities for all the faculty. Students are urged to give objective, unbiased comments regarding the morning's session.

2. PROGRAM AREAS

SENSORY, SOMATOSENSORY, AND VESTIBULAR SYSTEMS

Our curriculum follows the sequential development model, and the principles of growth and development are addressed in each area:

1. Development is cephalocaudal (from the head to the tail). For example, children must have head control before they are able to develop control of legs for walking.
2. Development occurs from proximal to distal (from the middle of the body to the extremities). Children must learn to use their shoulders before they are able to button a shirt.
3. Development moves from the general to the specific. For example, infants first grin broadly at the sight of a favorite toy. Later they are able to reach it, pick it up, and use it purposefully.
4. Development moves from the simple to the complex. Infants learn to drink from a bottle before they are able to hold a glass and sip from a straw.
5. Development is continuous. One stage influences the following stages and skills develop in stages. Around 10 months, a child begins to develop object permanence (awareness that an object exists when out of sight), a concept necessary for language development.
6. Development is similar for all children. The sequence of development varies little from child to child. Rate and quality, however, may vary depending on physical and mental capabilities.

Erikson's (1963) model of psychosocial development has had major influence on our curriculum. According to Erikson, the development of trust in a child occurs through the proper handling of the child and through the manner in which the parents embrace, speak, and smile at the child. We stress this type of effective bonding and attachment in all aspects of the Early Intervention Program.

We also use the theory of Sears, Maccoby, and Levin (1957) on extrafamilial development of the child. Our professionals encourage interactions of the child outside the family unit both during the intervention sessions and in everyday situations.

To a large extent, our curriculum is based on the observations and theory of Jean Piaget (1969), who concluded that the first 2 years of life constitute a period of sensorimotor learning. According to Piaget, this period provides a basis for future intellectual accomplishments. During the sensorimotor period, a child should begin to explore the environment and to learn the important concepts of object permanence and spatial and temporal organization and to use tools or means-ends relationships, cause-and-effect relationships, and imitation.

We emphasize sensory motor activities as building blocks for other developmental skills. Many parents are able to provide excellent sensory stimulation for their children without any help from the team. Others, however, need reminders that developmentally delayed children must experience the same sensory input as normal children, but they may be unable to provide it for themselves because of physical or mental limitations. Our aim is not to bombard the children or overload their sensory system. Instead, we attempt to provide opportunities for the children to give themselves the needed input through play in a sensory-enriched environment. We stimulate all the senses – sight, hearing, smell, taste, proprioception, and touch – to allow the children to experience all facets of the environment.

SIGHT

Vision is of primary importance in sensory stimulation. At birth, visual acuity is normally 20/150, but at 6 months vision is similar to that of adults (Cohen, Deloach, and Strauss 1978). The first visual response is from straight in front of the infant at 19 cm, which is about the same distance as from the infant's eyes to the mother's breast. By 4 months infants are able to accommodate to light and dark, but infants seem to prefer moderate amounts of light (Salapatek 1975). A review of the literature by Bornstein (1978) showed that infants have color discrimination, but the findings vary as to exact color preferences. By 6 or 7 months, depth perception has developed. Prior to 6 weeks, infants will scan highly contoured areas. By 10 weeks, they will look at the center of an object and then out to the high contrast areas. By 3 months they will scan an entire object. The human face, so full of contrasts, is an excellent first toy (Gibson and Walk 1960; Fantz, Fagan, and Miranda 1975). By 3 months, infants track through 180°, and by 4 months they track vertically.

In assessing children's development, it is important to observe them following an object through the full visual range, both horizontally and vertically. To rule out a visual problem, we observe tracking in a variety of positions – supine, prone, and sitting. Children with increased tone may be locked into an extensor pattern and be unable to track in a supine position. Once relaxed in a sitting position, however, they may be able to track quite well.

We have found that infants track a novel item better than a familiar toy. One effective toy to use is a stringy yarn ball that is bright red or yellow. Brightly colored toys and rings on strings are also used. Parents are encouraged to make mobiles or to string toys across the baby bed. For variety, we suggest using pictures from magazines or of family members. Toys should be close in view. A mirror is suggested as all our children respond to looking at themselves. Nonbreakable mirrors should be low, near the floor, or in the bed for easy viewing.

Vision problems such as nystagmus, myopia, and esotropia are common in children with handicaps. Because vision is so important, we watch the children carefully to make certain they are responding properly throughout the program. We evaluate the way they hold toys or position their heads to see or play in sitting and standing positions. When necessary, children are referred to an ophthalmologist.

HEARING

Acoustic fibers are not myelinated at birth; therefore, infants respond inconsistently to sound. They will often respond to a loud noise, but they are probably responding more to vibration. To assess hearing in infants, look for the following:

- Does muscle tone increase or decrease?
- Do they blink?
- Are there breathing disruptions?

By 3 months, normal infants will turn their head to the side from which the noise emanates (Fig. 1A). By 3 to 4 months, they will turn their head and eyes (Fig. 1B). When sound emanates below the ear, they will turn their head to the side and down at 5 to 6 months (Fig. 1C). If the sound emanates above the ear, 6-month-olds will turn their head to the side first and then upward (Fig. 1D). By 6 to 8 months infants turn toward the sound in a curving arc (Fig. 1E), and by 8 to 10 months they will use a diagonal pattern (Fig. 1F). By 13 to 15 months infants will turn their head and eyes upward (Fig. 1G). Hearing is a learned behavior; infants learn to screen out unimportant sounds and by 7 or 8 months they are able to filter out background noise.

Figure 1. Development of head and eye responses to sound.

Early stimulation of hearing is important, and parents are encouraged to talk and sing to their infants. A low pitch is soothing: A high pitch develops alertness (Eisenberg et al. 1964). We encourage parents to take the children around the house to let them hear the vacuum, washing machine, and radio. Noisy toys, objects to rattle, and toy radios are wonderful sound sources. When we test for localization, we try to use familiar voices to which the children are more apt to respond. We ask parents to talk to their children from different parts of a room to help the children localize. Identifying sounds for the children ("Listen, hear the bird." "That's loud. Daddy dropped a book.") is encouraged. Using tapes and records is recommended whenever possible. However, just as with all the other senses, hearing accommodation occurs, so we advise that tapes or records be played only for short periods of time (less than 15 minutes) in order to be of continued interest to the children.

Our consulting audiologist assesses the children at 6 months. At this age, audiologists can get a fairly clear idea of whether a child is responding to sound appropriately. As often as needed, retests are scheduled. Monitoring hearing is very important, especially for children with Down syndrome who are particularly susceptible to frequent ear infections and hearing losses.

TASTE AND SMELL

Taste and smell, although often overlooked, are valuable sources of sensory stimulation for infants. Both are phylogenetically old systems and are highly developed in infants.

Certain odors produce changes in breathing patterns and activity levels of infants. They will turn toward pleasant odors and away from unpleasant ones. An odor can influence perception of other senses because of the olfactory system's close ties with the reticular activating system. Olfactory tracts are also closely related to the limbic system, causing certain odors to create emotions and memories. The following odors are useful for stimulation:

- Vinegar, to increase tone and alertness
- Vanilla or banana extract, to facilitate sucking and swallowing
- Pleasant smells such as perfumes, to decrease tone and hyperactivity

Avoid mint odors, such as spearmint or wintergreen. These can cause respiratory or cardiac changes and can be dangerous to children already susceptible to such problems.

Taste is also very acute in infants. Newborn infants can differentiate salt, sugar, lemon juice, and quinine (Pick 1961). When we give sugar to infants, they smack, suck, and increase drooling. Salt produces facial grimacing and tongue thrusting.

In our program, 20 minutes are spent on taste and smell each session. We have several vials (plastic film cases) containing cotton soaked in substances producing odors for the children to smell. We use perfume, coffee or cocoa, vanilla, vinegar, garlic, spices (such as cinnamon, cloves, or nutmeg), and alcohol. Next, we give the children certain tastes: diluted lemon juice (sour), sugar (sweet), and salt. We ask the parents to write down the child's response to these tastes and odors. In our lecture, we attempt to show parents how sensitive infants are to odors and tastes, and we encourage parents to let them experience different odors and tastes. During this period, parents are also encouraged to talk to the children, telling them about the taste and smell. We also try to assist parents in determining what increases drooling and tongue thrusting in order to avoid these odors and tastes when possible.

VESTIBULAR SENSE

The vestibular sense enables children to determine whether they are moving or their environment is moving. Located in the ear, receptors include the semicircular canals, which receive rotary input (such as spinning), and the sacculus and utricle, which receive linear movement. The vestibular system affects tone and cocontraction in the arms, trunk, and legs and conjugate eye movements and eye fixation. The system is also closely allied with the reticular activating system. The vestibular system also influences the autonomic nervous system and causes vomiting, dizziness, decrease in blood pressure, and vertigo under some conditions.

In our program, the vestibular system is used to help normalize tone as much as possible and to increase or decrease arousal levels. In general, children in our program have tone abnormalities contributing to slower achievement of motor milestones.

To increase tone, we use the trampoline (bed mattress at home), beach balls, rocking chairs, and physical movement by the parent with the child such as fast rolling or swinging in the arms. Hypertonia is usually decreased by using slow rocking in a chair or the arms and gentle, slow rolling movements. Other vestibular inputs can come from scooter boards, slides, Sit-N-Spin toys, and somersaults with the older children to increase tone. Each activity is monitored for duration and intensity to fit the individual child's response and the parent's ability to handle the stimulation.

PROPRIOCEPTION

Closely associated with problems involving tone are those involving the proprioceptive sense. Proprioception is the sense of movement or position in space and is very important in a child for recognizing limb position and developing the vibratory sense and stereognosis. A typical and easily identifiable problem in this area is the inability of an infant to conform to a parent's embrace.

In order to make children more aware of their bodies, we use a combination of the senses. Bells tied to booties or wrists provide auditory stimulation when the children move extremities. Brightly colored socks, gloves, and toys (visual input) are helpful when placed on hands and feet. As the children mature, small weights (¼ to ½ pound) provide the sense of pressure at the ankles and wrists. (Weights used with high tone children might increase spasticity.) The trampoline is an excellent way to build tone, help children learn about their bodies in space as they bounce on their stomachs or backs, and to improve balance and equilibrium. Temperature, taste, and smell also help infants become aware of their bodies and what they do. Use of the tactile sense will be discussed more fully later.

TOUCH

Touch is very important to the growing child. It is the first system to mature in the fetus. Most of an infant's primitive reflexes respond to tactile input. If the tactile systems within a child are not balanced, protective responses take over and tactile defensiveness results.

Several children in our program have exhibited tactile defensiveness of the mouth, hands, face, stomach, or feet. Our aim has been to eliminate the problem before it arises by providing adequate tactile experiences. We encourage parents to provide the children with a variety of textures to touch, whether by using a texture box with assorted cloth swatches or through the daily routine of life. Parents are encouraged to let children lie prone and supine

on different surfaces: terry cloth, blanket, carpet, couch, etc. Parents are asked to provide different tactile experiences for the children at bath time with varying bubbles, soaps, towels, and lotions. Allowing the children to experience different textures in their hands is provided by playing with plastic pan scrubbers, sponges, cotton, and fur. As infants mature and are able to sit, water and sand play is provided. To work on hand and problem solving skills, children search for toys hidden in boxes of beans, rice, or Styrofoam peanuts. If a child enters the program and exhibits tactile defensiveness, a physical or occupational therapist can assist by providing the appropriate sensory experience for the child. Specific training in this area is necessary in order to help children adapt to their environment and not to overstimulate them.

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SENSORY STIMULATION FOR INFANTS

SIGHT

Perform each activity with your infant lying on his back and stomach and in a sitting position.

Goal	Activities
1. Focus on a face or an object for increasing periods of time (infant	1. Have your infant look at your face as you talk with him. He will look for short periods at first, then longer periods as he grows and learns. 2. Hold a brightly colored object 6 to 8 inches from the bridge of your infant's nose.
2. Focus on and follow moving objects (will begin to follow to one side, then to midline, then both horizontally and diagonally)	1. Slowly move a brightly colored object from side to side, up and down, and in a circle from 8 to 12 inches from your infant's face. 2. Increase the speed of the object as the infant's skill improves.
3. Develop eye-hand coordination	1. Help your infant find his hands. 2. Help him reach for objects by directing his hand toward the object once it is seen. He will miss the object many times before reaching and touching or grasping.
4. Look for objects that are moved out of sight	1. While the infant is looking, put the brightly colored object out of sight, then bring it back into his vision. 2. Help him keep his eyes on it as it is moved away.

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SENSORY STIMULATION FOR INFANTS

HEARING

Learning takes place through the senses – sight, hearing, touch, taste, smell, and movement. Infants are ready to start learning at birth. Play is the work of infants and children. Toys are their tools. Play teaches them to use their ears, eyes, hands, and body.

1. Do loud and strange noises startle or interest your infant?
2. Does he turn his head toward the sound or react to it in some other way?
3. Does he seem to hear the sound of footsteps approaching his crib?
4. Does he become fussy or stop crying when he hears his mother's voice before he can see her?

Suggestions to stimulate hearing:

1. Tie a little bell on each bootie. He will hear the sound as he moves his legs.
2. When you put a rattle in his hand, help him move it. Listen and see if he hears it as well as sees it.
3. Let him listen to the sound of a ticking clock for a short period.
4. Crumple paper and let him hear the sound.
5. Give him a bell on a handle. Help him learn to shake the handle and ring the bell.
6. Talk to him from different places of the room. See if he follows with his eyes. If he hears and follows, he is beginning to coordinate sound and visual image – an important milestone.
7. Give him blocks with bells to play with.

Let your infant hear as many different sounds as possible to help him develop listening skills. When you leave him alone, he will be soothed by such sounds as the tinkling of wind chimes, a clock that ticks quietly, or soft music.

Hearing is basic to learning to speak. When you focus on sounds and noises, don't forget the sound of voices around the infant.

1. Sing softly to him; recite a short nursery rhyme.
2. Imitate the noises the infant makes back to him; he will learn to imitate you. Avoid baby talk. (It is not baby talk to imitate the individual sounds and syllables that an infant says, such as "eee," "dee," and "ahm.")

Early Intervention Program
Child Development Center
UTCHS

SENSORY STIMULATION FOR INFANTS

HEARING

The following activities are intended to help you help your infant to

- Become alert to sounds in his environment
- Localize sounds
- Listen to sounds selectively
- Attend to sounds for longer periods of time (e.g., music)
- Begin to imitate speech patterns

1. Let your infant hear as many different sounds as possible. Listening is learned.
2. Provide your infant with interesting ways to make noises – banging, squeezing toys, crumpling paper, splashing water.
3. Speak to your infant or make a noise and pause to see whether he turns to where the sound originates. If not, then
   - Shake a rattle 6 to 12 inches from your infant's head straight out from his ears.
   - Physically turn his head toward the sound with your finger on his chin. Practice this two or three times daily. As the infant learns, decrease your help.
   - As your infant is able to turn to sounds consistently, increase the distance between the origin of the sound and the infant. Vary the planes from which the sound comes.
4. Expose your infant to a variety of sounds. In simple, short, and specific statements, tell him what he is hearing. Do this every day throughout the day with everything done to him, with him, and around him.
5. Encourage him to imitate sounds. Give your infant a chance to repeat your sounds, then repeat the sound again. In time, your infant will repeat your sounds. Smile and hug him when he makes sounds.
6. Tie a bell on each bootie for a period each day. He will hear the sound as he moves his legs. It will help him to find his feet, when he can locate sounds.
7. When you put a rattle in his hand, help him move it. Listen and see if he hears it as well as sees it.

Important: Hearing is basic to speech.

TASTE AND SMELL

Taste and smell are two of the senses that are usually well developed at birth. During the first few months of life, infants tend to have the two senses almost combined. Infants will often smack their lips when they smell a scent. Even later in life, the sense of smell helps to enhance taste. Remember how things taste different when you cannot smell them?

Certain odors cause different responses in children. Try the following scents with your child and write down his response:

Perfume	Alcohol
Vanilla	Cocoa
Butter	Garlic
Vinegar	Spices (cinnamon, nutmeg, clove)

Tastes are perceived on different parts of the tongue. To increase the awareness of your child to tastes, try placing the following on different areas of the tongue:

Bitter, back of tongue
Salt, everywhere
Sweet, front
Sour, sides

Record how your child responds to different tastes.

For children who drool, try to limit the sweet tastes, which tend to increase the amount of saliva produced.

Try different tastes and odors all during the day. Be sure to tell your child about the odor or taste. Tell him if it is sweet, sour, bitter, or salty.

VESTIBULAR STIMULATION FOR INFANTS

To increase tone, do the following exercises or use the following equipment:

1. Jiggling: with legs extended, move your child back and forth so that his belly jiggles.

2. Bouncing: keep his legs straight but up in the air and bounce the bottom up and down.

3. Swinging in the arms: hold the child securely, cradled by your arms, and swing him.

4. Fast rolling: roll the child back and forth quickly.

5. Fast rocking: use a chair or just hold child.

To increase tone, do the following exercises or use the following equipment (continued):

6. Swinging: use a hammock swing or wind-up swing (quickly).

7. Bouncing on bed, trampoline, air mattress, beach ball.

8. Somersaults.

9. Sit-N-Spin toys.

10. Scooter boards.

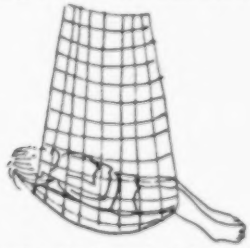
VESTIBULAR STIMULATION FOR INFANTS

To decrease tone, do the following:

1. Position the child in a sidelying position across your lap. Extend the lower arm and flex the upper leg. Rock slowly for a minute. Then turn him the other way. This position is called the "guitar carry."

2. Place the child on his back on the floor. Raise his hips up and, with knees bent, slowly roll from side to side.

3. Slow swinging in a hammock swing.



4. Slow rocking in chair or held close to body.

SAND PLAY

EQUIPMENT

Sand (box or dish pan)	Bucket	Shovel	Small toys
Sieve or strainer	Measuring cup	Spoon, cup	

GOALS

1. Provide tactile experience with sand and objects.
2. Reinforce grasp-and-release patterns.
3. Experience the concept of weight.
4. Practice sitting balance in a new situation.
5. Use speech concepts during activity (names of objects and prepositions).
6. Practice visual stimulation and eye focusing skills with sand and objects.
7. Increase attention span.
8. Reinforce concept of object permanence (i.e., that the toy still exists even though it disappears under the sand).

DIRECTIONS

1. Take your child's clothes off (except pants or diaper). Allow him to feel the weight of the sand in his hands, to pour the sand out of his hands, and to run his hands through the sand.
2. Talk to your child about what is happening. Use such words as "in," "down," "out," "through," "cup," "sand."
3. Let your child place his feet in the sand. Pour sand over his feet and cover them up.
4. If needed, use your hands to help your child play with the various items in the sand.
5. Hide the toys and items in the sand while your child is watching and see if he will hunt through the sand to find the toys or objects. You can make this into a hide and seek game with the toys, but your child will need to watch when you hide the toy.

WATER PLAY

The bath time is a great time to work on skills taught at the Early Intervention Program. And it's fun!

Water is a nice medium to work in because you can do so many things to it and in it:

- Add color with food coloring
- Add bubbles with soap suds
- Add ice cubes, soap, or shaving cream to float
- Find hidden toys
- Learn to pour
- Learn word concepts such as "wet" and "cool"

Toys promote whole-hand grasp, individual finger use, and fine motor control. Try different toys in the bathtub. Let your child experience a variety of textures in water from the sink: Tupperware, pot scrubbers, sponges, etc.

Toys to use:

1. Get your child to squeeze the squeeze toys and watch them float
2. Rings: hands and individual finger use
3. Cups: to pour and pour on hands
4. Blocks: to find and put in cup
5. Balls: individual finger use, to poke in
6. Pegs: to find
7. Small beads: to develop more skill

TACTILE STIMULATION FOR INFANTS

The following activities are intended to help you help your child to learn to

- Use input via the skin to integrate many functions including caressing, hugging, and kissing.
- Differentiate between things that are hard, soft, rough, smooth, etc.
- Differentiate between his body and the environment around him and between parts of his body.

1. Put objects of different textures in his hands.
2. Gently rub his body with different types of materials (cotton, lotion, terry cloth).
3. Put him on different textured surfaces, e.g., carpet, tile, wood floor, blanket on floor.
4. Rub his hands (palms) and soles of feet with your hands daily. Use other textures as well.
5. Blow on his tummy, face, and hair.
6. As your child is able to get outside, help him feel grass, leaves, concrete, bricks, etc.
7. Put objects of different weights in each hand as he learns to hold things.

SELF-HELP SKILLS

Becoming as independent as possible in self-care is a major habilitative goal for infants and young children. Neuromotor maturation manifested in the acquisition of motor skills sets the stage for beginning self-care skills. These skills are built on progressive steps following sequential developmental patterns. For example, hand-eye coordination and the ability to move the hands to midline allow the infant to reach for the breast or bottle.

Self-help skills are discussed in the sequence in which they are usually achieved: feeding, undressing and dressing, grooming, and toileting.

FEEDING SKILLS

Faculty and parents view feeding skill development as so essential that a relatively large percentage of time is given to this activity: approximately 45 minutes of each session.

Assessment

Each child's developmental level in feeding is grossly assessed at the beginning and end of each semester. The Gesell Developmental Scales (Knobloch, Stevens, and Malone 1980) are used as a guide with additional assessment tools such as the Pre-Speech Assessment Scale (Morris 1982). Additional information is obtained by observing the weekly feeding periods and from parent interviews. Goals are then developed for each child and included in the individual program plans given to the parents.

Intervention and Monitoring

Parents are given general program information on feeding skill development at least once each semester during a group instructional period. Guidance is given to parents on upcoming changes in their children's feeding skills such as cup drinking, finger feeding, spoon feeding, and weaning. Techniques are reviewed with the parents during this session and handouts are given to help them implement each program. The group sessions are informal and allow parents the opportunity to explore and discuss the information provided.

We encourage parents to put their infant's hands on the bottle for the first few minutes of each feeding by age 3 to 5 months. (Breast-fed infants can use a bottle of water.) Infants begin sitting upright (usually propped) in a highchair when they have head and some trunk control, usually around 5 to 6 months. This position promotes finger feeding, beginning with hand-on-hand guidance, around 7 to 9 months.

Drinking from a small plastic cup (cups with handles, covers, or spouts are not used) begins at 6 to 9 months. A small cup allows the infant to use the holding technique learned earlier with the bottle. When parents use hand-on-hand guidance, cup drinking increases and the transition from bottle to cup is easier. (Replacing the cup on a table is a skill that comes later.) We begin with a cup that is half-filled. The amount of fluid can be increased as the infant gains control in lifting and tilting.

Feeding skills are achieved at expected ages for many infants and young children in the program. Spoon feeding with hand-on-hand guidance begins between 9 and 12 months, if prerequisite skills are evident. We use regular teaspoons, not infant spoons. Straw drinking is introduced around 18 to 24 months.

Instruction provided during group sessions is translated into action during regular feeding periods each week. Parents bring their children's lunches to each session. Facilities for warming food and beverages and for refrigeration are available. Juice is provided during the 10:00 break for those children who are drinking from cups.

Highchairs, child-size tables and chairs, and folding chairs or rocking chairs for parents are available. Foods needed for assessing feeding skills (baby foods, finger foods, and beverages) are also available.

The nutritionist, nurses, physical therapist, speech pathologist, and students are all actively involved in the feeding skill development program. Each is acquainted with intervention techniques and with each child's feeding goals. Children who are cup or spoon fed or who are learning these skills are seated in highchairs or at child-size tables, and parents are seated with their children. The staff is active in monitoring and modeling techniques already described to the parents. The weekly sessions provide an excellent opportunity to monitor the effectiveness of the techniques used by the parents, the children's behavior, and their progress. Parents are able to view other parents and share information during this time. They learn a great deal from each other's successes and failures. It is useful for parents to compare and contrast advances made by their children when grouped with children of various developmental levels.

UNDRESSING AND DRESSING SKILLS

While undressing and dressing skills are developed later than self-feeding, it is important to begin teaching prerequisite skills in late infancy.

Assessment

The Lexington Developmental Scales (United Cerebral Palsy of the Bluegrass 1977) and a checklist are the basis for gross assessment of undressing and dressing skills. The undressing and dressing skills are evaluated at the beginning and end of each series of sessions, and goals are developed.

Intervention and Monitoring

Training begins by removing simple articles of clothing (hat, cap) during late infancy. Using hand-on-hand guidance, demonstration, and verbal direction, these tasks are practiced in front of a mirror. In addition to learning the undressing and dressing skills, the children also learn self-identity, position in space, and their body parts.

With assistance, the children are taught to lift their feet for shoes and pants and to hold out their arms for sleeves. Then, they learn to push an arm or leg through a sleeve or pants leg.

For each specific skill to be taught, the faculty explains and demonstrates in detail to the parents in a group the technique for teaching the skill. Handouts accompany the self-help sessions. Each task is divided into its simplest components, with parents providing only as much help as is needed and gradually relinquishing their help as the child masters the task. This technique is called "fading."

With undressing, children begin to learn to remove shoes and socks in a backward chaining sequence; that is, the last part of the skill is taught first. For example, to teach removing socks, a parent will remove one sock three-quarters of the way off the child's foot. With hand-on-hand guidance and verbal direction, the sock is then removed by the child. Success is rewarded with praise, touching, clapping hands, or other social rewards. When that first step is learned, a sock is taken half-way off (just over the heel), and again hand-on-hand guidance is used to demonstrate the process.

Fading used with backward chaining provides a proven method for teaching these skills. To summarize, the steps of fading include

1. Verbal direction with hand-on-hand guidance
2. Verbal direction with hand-on-wrist guidance
3. Verbal direction with hand-on-elbow guidance
4. Verbal direction with hand-on-upper-arm guidance
5. Verbal direction with modeling
6. Verbal direction alone

Each successful step along the way is consistently rewarded socially. Parents are encouraged to work on undressing and dressing skills with their children at home where such tasks are natural. Consistent teaching and practice at home greatly enhance the acquisition of these skills. Some tasks are more complex and require a great deal of time and effort.

Playing with larger articles of clothing in a session called "dress up" helps the children associate specific clothing with body parts.

By observing parents with their children during undressing and dressing activities over a period of several weeks, the faculty can evaluate the parents' progress in implementing the program for their child.

GROOMING

Small beginnings in personal habits and good grooming are started early. When giving children a bath, parents are encouraged to elicit the children's help by having them take the bathcloth and wash their abdomen and other parts of their bodies. Drying hands after they are washed and brushing teeth with help are other important skills. Hair brushing and combing can be started early. These tasks are usually taught using fading, and goals are established as part of an individual's care plan.

TOILETING

Some children have the neuromotor maturation to begin toilet training before leaving our program. Readiness is assessed by the length of time the child is dry, the discomfort exhibited when wet or soiled, and the child's interest in what takes place in the bathroom, as well as the interest of the parents in pursuing this skill. Parents are asked to keep an elimination record, and then an individual program is developed for the child and parents.

In our view, acquiring basic self-help skills helps infants and young children gain independence, enhance their self-esteem, and prepare the way for greater self-care skill development.

UNDRESSING AND DRESSING

1. Practice with loops: over one arm, the other arm, legs, and over his head if the loop is large enough. When dressing, pause to let him push his arms and legs into the garment opening. Tell him what to do; start the arm or leg if necessary. Encourage his help; praise any effort he makes. Tell him what is happening.
2. Work with a hat and hairbrush. Add a comb when he knows what to do with the hairbrush. Try the same things with hand and face washing, in front of a mirror.
3. Continue with training in finger feeding, spoon feeding, and holding a cup. Decrease bottle feedings.
4. Keep the child on a schedule; meals and bedtime should be about the same time every day. Children feel more secure when they can depend on a routine. Have the child at the table with the family at meal times, and make them a pleasant time for everyone.

Developmental level: 8 - 12 months

1. Pause to allow your child to push his arm or leg into a garment opening. If necessary, help him place his limbs in the garments and encourage him to continue pushing his limb through. Verbalize the actions to him.
2. Encourage him to try to unzip and zip zippers in clothes around the house, notebooks, purses, and any other accessible objects. Begin by demonstrating the activity to him, then tell him to unzip (use hand-on-hand guidance if necessary). After he accomplishes unzipping, go on to zipping up objects. Praise his efforts.

Developmental level: 15 - 21 months

PLAY: DRESS-UP AND MIRROR

EQUIPMENT

- Floor-length mirror
- Hand mirror
- Old hat
- Old purse
- Old jewelry
- Old dress-up clothes
- Old pair of boots
- Old ties

OBJECTIVES

1. Focus attention on image in mirror.
2. Follow verbal directions.
3. Put on clothing on appropriate body parts.
4. Identify body parts.
5. Imitate an adult.

DIRECTIONS

1. Place the child in front of a floor-length mirror or hand mirror. Ask him to look at himself.
2. Some children enjoy dressing in front of the mirror. Use above items and show the child his image in the mirror.
3. Use the words: "See_____! Here is the hat, the purse, and the boots." "Can you smile?" "Can you wave to the little boy in the mirror? He has arms and legs, head, eyes, nose, mouth, and hair like you." "Who wears a tie, mommy or daddy?" etc.

Early Intervention Program
Child Development Center
UTCHS

WEANING FROM BOTTLES

The process of weaning from the breast or bottle to a cup usually occurs between the last part of the first year and up to the second year of age. There is no magic age at which all children are developmentally ready for weaning. Some children begin weaning themselves by showing disinterest in nursing and more interest in drinking from a cup. Other children are less independent and cling to their bottles long after the second year of age.

It must be emphasized that weaning children who have not shown interest in relinquishing the bottle for a cup can be stressful to everyone involved, but it need not always be that way if it is planned well.

Nursing is a familiar and comforting activity that the child has spent many months perfecting. The routine is familiar to the parents, and the sight of a contented child is also comforting. Why give up peace and tranquility for what many parents fear to be tears and stress?

There are several reasons for helping the weaning process along if children with developmental delays have not relinquished the bottle at age one. Sucking a bottle does not provide much control of the drinking process by the tongue. Children with a tongue-thrusting pattern will not learn to overcome it by staying on a bottle. Children risk developing "nursing bottle syndrome," which is the carious destruction of the upper front teeth. This is especially true if children take a bottle to bed or if the bottle contains a sweetened beverage. Children who continue on a bottle can be at nutritional risk if the major source of calories is milk. Milk is low in iron, vitamin C, and other nutrients essential to rapidly growing children who have long since used up resources built up shortly before birth. The "drinking man's diet" has never been well balanced.

Successful weaning is accomplished when children are well and there are no other major changes being made in their lives. To begin the weaning process, encourage children to drink from a cup at each meal. A lot of praise and tolerance of the initial messiness is necessary to continue at this point. Gradually eliminate the least popular bottles, usually the daytime bottles, as children take more milk or formula from the cup. Substitute the bottles that have been eliminated with a lot of love, attention, affection, and a favorite blanket or toy.

The early morning, nap, and bedtime bottles are often the most difficult to give up. Children are tired and usually have less tolerance at these times. Set reasonable limits on the bottle and be consistent. If you give in after children have cried, they will most likely try crying again to get you to give in. As you well know, they can usually keep it up longer than you can. Also, do not battle or argue with children. It takes two to make an argument.

Remember, give lots of love, attention, and affection. Children are giving up a very comfortable mode of drinking for a new one. Make the new one, cup drinking, as happy and as positive an experience as the old one.

CUP DRINKING

Drinking from a cup is a skill that requires a change in children's familiar bottle sucking or nursing pattern. It requires jaw stability, lip closure, good tongue movements, and a coordinated swallowing pattern. In addition, drinking from a cup eventually includes their ability to do each of the following steps on their own:

1. Reach and grasp cup
2. Hold cup in an upright position with hand(s)
3. Move cup in an upright position to mouth
4. Tip cup rim toward mouth
5. Swallow the liquid
6. Tip cup rim back to upright position
7. Bring hand(s) holding cup back to the table
8. Release hold on cup

It is easier to understand why it takes so long to master cup drinking when you break it down into each step.

Some children choke on fluids from a cup because they have not coordinated their swallowing and cup drinking yet. Small amounts, such as one teaspoon of fluid, should be offered to children to help them practice this coordination. If they continue to choke on fluids or let most of the fluid run out of their mouths because of poor lip closure, a home program to work on these skills will be necessary.

To provide your child with cup drinking experience, remember the following:

1. Be sure your child is in a sitting position with the body, especially the head and trunk, in line. Position him so that his head is not forward or backward if he does not have good head control.
2. Use a small, unbreakable cup without handles or lid.
3. Keep the cup a little more than half-filled. This will keep him from having to tilt his head back if there is too little liquid in the cup or from getting a face bath if there is too much.
4. Place the cup directly in front of him (not to left or right) on the tray of the highchair.
5. Put his hands on the cup with your hands over his initially.
6. Bring the cup to his mouth, allowing his head to be forward and tilted slightly downward.
7. Place the rim of the cup on the lower lip and lift the cup to where the liquid touches the upper lip. Note: Never pour liquid into his mouth.
8. Do not remove the cup after each swallow; let it rest between his lips.
9. Gradually remove your assistance as your child takes over each step of the cup drinking sequence.

SPOON FEEDING

Spoon feeding requires a good hand-to-mouth pattern, lip closure, good tongue movements, and the ability to swallow liquids and solids without choking. Appropriate support will be needed to provide sitting balance and head control if your child has not achieved these yet.

Spoon feeding eventually includes your child's ability to do each of the following steps on his own:

1. Grasp the spoon in his hand
2. Fill the spoon with food
3. Direct the loaded spoon to the mouth
4. Insert the spoon into the mouth
5. Remove the food from the spoon
6. Remove the spoon from his mouth
7. Return the spoon to the dish

Some pointers to remember about spoon feeding:

1. Use a regular teaspoon, not one with a long or deep bowl.
2. Put only a small portion of food into the spoon.
3. Allow your child to take the food off the spoon with his lips; don't rake it off into his mouth.
4. Don't wipe between bites.

Early Intervention Program
Child Development Center
UTCHS

TEACHING YOUR CHILD TO USE A SPOON

1. Position your child correctly, according to his individual needs.

2. Place food and spoon in front of him. Tap the spoon on the table and pause to allow the child to reach for the spoon. If he does reach, offer praise as reinforcement.

3. If your child does not reach for the spoon, place your hand over his hand and assist him in grasping the spoon. Assist him to scoop the food and bring it to his mouth. Offer reinforcement through praise or patting.

4. Continue to give hand-on-hand guidance until he learns the environment. Transporting the spoon to the mouth and unloading require wrist movement that may increase the amount of time needed to learn the movement. As he learns the movement, decrease assistance by moving your hand to his wrist for guidance.

5. As the child continues to learn movements, decrease assistance by placing your hand on his elbow for guidance. Continue to offer praise for positive responses. Ignore failures and encourage your child to try again.

6. After your child successfully feeds himself with elbow guidance for two consecutive meals, remove your hand from his elbow. Stand behind him, rest your hand on his shoulder, and continue to offer praise for positive responses.

Source: Neely and Smith 1977.

SOCIAL SKILLS

Social skills are those behaviors that relate to a person's ability to interact with others and function well in society. Because appropriate social skills are the key to a person's acceptance in society, they are a major focus in our program. If parent-child interactions are rewarding, then further positive social interactions occur with others.

While bonding and positive parent-child interactions influence the child's development in all areas, these interactions are essential building blocks for social skills. Some parents seem to be afraid of children with developmental delays, and others seem to deny the children's existence. Both groups need assistance to bond and interact. Evidence of fear and lack of bonding is manifested when parents show little or no affection toward the child or when parents fail to fulfill the protective parenting functions. To begin to develop trust, parents learn to touch, hold, and play with their children through the role modeling and teaching by the EIP faculty.

Children and parents may have difficulty with bonding and attachment after an illness. We have observed that infants who are developmentally delayed also show delay in bonding, demonstrated by their failing to respond to affection and social stimuli such as smiling, touching, and eye contact.

Acquisition of social skills is typically slow for infants who are developmentally delayed. After receiving a social stimulus, infants demonstrate through some behavioral change that the stimulus has been received. It is usually several months before infants can initiate the social stimulus. Because infants seem unresponsive, parents frequently become frustrated and miss the cues given. In our program, effort is made to provide that necessary feedback for parents. Parents are praised for showing sensitivity to their infant's cues and responding appropriately. During group sessions with parents and infants, we identify infant cues and discuss examples of sensitive responses.

The gaze of the newborn may be the first social skill. Eye contact and smiling are developed as the parents and others providing care talk, touch, and look at the infant. Maintaining eye contact is objectively measured periodically. Unless eye contact is reinforced, both parents and infants decrease their use of this important means of communication.

Play is a major vehicle for developing social skills, and mirror play enhances the development of several skill areas, including social skills. As the infants make eye contact with themselves in the mirror, they look, smile, touch, and pat – responses that should prompt immediate feedback from parents, thus promoting interaction. As social sounds are reinforced, language learning also occurs.

In addition to practicing social interaction with the caregiver, children are encouraged to interact with each other. Progressive activities start with placing infants on mats in a prone position facing each other. All social interaction is reinforced. When infants are able to sit up, other social activities are added while sitting in groups or in a small circle: Rolling a ball to one another (with assistance), looking and reaching after bubbles that are blown, and singing activity songs or finger plays work with youngsters to develop social skills.

SOCIAL SKILLS

Social skill development deals with acquiring interpersonal abilities, that is, the ability to get along with others as well as to function in the social situation.

The following are suggestions to aid in attaining social skills:

1. Play peek-a-boo with your infant frequently. This can be done by tossing a diaper over his face when you are changing him, by peeking at him through the spaces between your fingers, and by lowering your face from his view.

2. When removing your infant from his crib, highchair, etc., hold out your hands, wiggle your fingers, smile, and say "up." Wait until he responds verbally or bodily before picking him up. If he is on his back, offer him your index fingers to grasp. Then slowly and gently help him pull to a sitting position and then standing. Once he is standing, hold him around his trunk and bounce him up and down, allowing his feet to touch a firm surface, before picking him up.

3. Hold your infant upright on your lap, facing you. Talk to him, saying,"Where is (name)?" As he attends to your face, bring the child slowly forward until you touch noses or your lips to his forehead, saying, "There he is."

4. While changing your infant's diaper or at other times, tickle his tummy gently while looking at and talking to him. Continue until he smiles; smile in return. Repeat several times daily.

5. Put your infant in front of a mirror at least once a day. Help him interact with his mirror image, especially with his fingers. Identify him and yourself.

Developmental level: 3 - 6 months

SOCIAL SKILL DEVELOPMENT

1. Play games like "pat-a-cake," "this little piggy," and face-to-face rhythm games. Encourage imitation of easy gestures and words. Name the body parts (if the game includes body parts), touching the child's and your own body parts.

2. Face your child and cover your eyes and say "Where did _____ go? I can't see you." Then help him cover his eyes and say "Where did Mommy go? ____ can't see Mommy."

3. Sit with your child in front of a mirror. Name facial parts, helping the child point to them. Ask the child to point to the body parts you name. Later, ask him to name the body parts you touch.

4. Sit on the floor facing your child. Roll a large bright ball to him. Encourage him to roll the ball back; help him, if necessary. Gradually decrease the size of the ball and increase the distance between yourself and the child.

5. Help him to learn to give affection; most already like to receive affection (hugs, kisses, love).

6. Smile and laugh more and at the appropriate time. Call attention to funny incidents; although he may not understand, he can laugh with you and the family.

7. Set a good example with "please" and "thank you."

8. Help him to say "hi" or "hello" and "bye-bye" at the appropriate times. (It is confusing if you practice "bye-bye" and nobody leaves.)

Developmental level: 9 - 12 months

SOCIAL SKILLS

Social skills deal with acquiring interpersonal abilities, that is, the ability to get along with others as well as to function in a social situation.

Your child needs to	Suggested activities
1. Learn to recognize basic feelings (moods) in himself and others.	1. Use words to describe for your child his own feelings. Say, "Oh, you look so happy: see how you're smiling," etc. Later, adding an explanation for the mood helps your child connect the mood to what is happening. ("You look sad; we took the toy away before you were finished playing with it.") 2. Another way to help your child identify the concepts of happy, sad, angry, etc., is to draw the appropriate face on a balloon and tie it to your child's wrist. Verbalize the name of the feeling or mood to your child. Encourage him to say it.
2. Participate in a variety of integrated sensory experiences.	1. Involve your child in activities in the kitchen. Encourage him to climb up on a chair to watch you make a cake. Name activities involved. Let your child feel the powdery, dry texture; describe the ingredients and actions involved. Let your child feel the liquid texture after the batter has been beaten and let him lick the batter off his fingers. Encourage him to verbalize. Encourage your child to smell ingredient odors that you are using when cooking (cinnamon, vinegar, etc.); say " smell_____." Let him taste the ingredients when appropriate. 2. Take your child on a walk often. If he has a stroller, stop the stroller to let him examine objects in the environment: Feel tree trunks, feel and pick up leaves, pine cones, pebbles, etc., smell and pick flowers or flowering shrubs. Help him, if necessary, to examine interesting objects along the way. If your child is walking beside you, encourage him to stoop and recover interesting objects. Name and describe the objects.

SOCIAL SKILLS

The following program is designed to assist you in promoting your child's social skills.

Your child needs to	Suggested activities
1. Smile and laugh more often.	1. Tickle your infant and laugh with him. 2. Respond to your infant's smiling and laughing by smiling and laughing with him and by talking to him. 3. Tell your infant what he is doing. Describe what is happening to him.
2. Maintain eye contact for longer periods.	1. Initiate eye contact with your infant. 2. Redirect his attention when his eyes wander. 3. Stay on his eye level when interacting.
3. Begin to respond to his image in a mirror.	1. Put your infant in front of a mirror at least once daily. 2. Help your infant interact with the mirror image. Put his hand on the mirror, point out who is being seen, etc.
4. Begin to anticipate being picked up.	1. Hold out your hands, wiggle your fingers, and say, "Up." Wait for some response before picking him up. 2. Praise any effort to begin reaching to be picked up.

BEHAVIOR MANAGEMENT

It may seem incongruous to speak of behavior management and young children in the same breath. Yet how many parents are awakened nightly by the screaming of a 10-month-old who only wants to play for a while? How many parents are frustrated because their children want to throw all toys? Even infants can make a whole family cringe during waking hours because of manipulative behavior. Some parents know that spanking is not the answer but do not know other ways to cope with undesirable behavior.

Behavior management concerns more than eliminating undesirable behaviors such as crying, spitting, throwing, or hitting; it is a systematic approach to teaching new,,desirable behaviors by positive reinforcement. Parents are trained early to use positive reinforcement such as verbal and physical praise. Tangible reinforcers are seldom used in our program except in extreme cases. We do not use punishment, although time out and aversive verbal cues such as "No, No" or "We don't hit" are used to eliminate undesirable behavior. Undesirable behaviors will often disappear if ignored, and we try this method when applicable. Certain behaviors, such as touching a hot stove or running into the street, cannot be ignored and must be dealt with. A good rule of thumb is to ignore behaviors that do not interfere with learning or put a child in danger. When a child with an undesirable behavior does not respond to usual behavior management methods, we recommend consulting a psychologist or other professional trained in behavior management so a structured program can be established. Consistency in the home (family and extended family) and among the EIP staff must exist for the change to occur.

The following are examples of behavior management we use in our program:

Target behavior	The child will hold his own bottle for all of his feeding.
Reinforcer	The bottle.
Program	Use of shaping principle.

An infant is asked to place his hands on the bottle for each feeding. At first, the mother must hold the infant's hands on the bottle. If the infant removes them or pulls away, the bottle is removed. The infant is asked to hold the bottle for a quarter of the feeding time, then half, then for all of his feeding, depending on his developmental skill level. Shaping breaks a complex task into simple steps so learning is easier.

Target behavior	The child will stop his crying behavior during exercises.
Reinforcers	Verbal and physical praise.
Program	Proper use of reinforcer with timing.

Whenever an infant is placed on a beach ball, he immediately starts crying (he is not ill, wet, or hungry). The mother continues with the exercise of tilting in sitting. As soon as the infant stops crying, the mother stops the activity and gives verbal and physical praise. She never stops any undesirable activity while the infant is crying. Providing the reinforcer immediately after the desired behavior is crucial.

Target behavior	The child will eliminate throwing behaviors when working at the table.
Reinforcer	Aversive verbal cue: "No throw," hold hands down.
Program	Reinforcement of incompatible behaviors.

The child is asked to do a task such as replace blocks in a container (he is able to do this cognitively and physically). Instead, he throws the blocks because it upsets his mother and he is in control. The mother is asked to remove the blocks, take both of his hands after he throws a block, and place them on the table saying sharply, "No throw." She also removes her attention by looking away. The child is given another block. If he throws it again, the same sequence occurs. Another block is given. If the child throws it again and does not put the block in a container as asked, the mother repeats the whole sequence again. Then she is asked to place the block in the child's hand and guide him to release the block. If he does not release the block, the mother physically helps him release it. The mother immediately gives verbal and physical praise. This action continues. If necessary, an older child is removed from the situation by turning his chair away from the table. The goal, however, is to reward the child for replacing blocks instead of throwing them (incompatible behavior because he can't do both at the same time).

Target behavior	The child will feed himself one bite of food after loading it himself.
Reinforcer	Verbal praise, food.
Program	Fading.

After the child is independently bringing the spoon to his mouth, he is ready to begin loading the spoon. The mother is asked to place her hand over the child's hand to aid in scooping. As he becomes more skilled, she moves her hand to his wrist, then forearm, then elbow until he is independent. This process is called "fading," and the child receives assistance, which is gradually reduced.

Target behavior	The child will stop his hitting behavior.
Reinforcer	Removal of all positive reinforcers (extinction).
Program	Time out.

The child hits a friend. The child is immediately placed in a corner facing the wall. He is told he is in "time out" for hitting. Time out lasts 15 to 30 seconds (use a timer). The child must remain there quietly, but once the timer goes off, he comes back to the group activity. The time out is repeated for every occurrence of hitting. Positive reinforcement is also used to praise the child for whatever desirable task he is doing when not hitting. Because the children in our program are very young, time out must be short. Removing all positive reinforcement of the unwanted behavior is the key, so no one is to talk to or look at the child when he is in time out.

Some behaviors may not respond to positive reinforcement because the reinforcer is not strong enough. Knowing what a child prefers is very important. Parents can often give valuable clues about certain preferences for affection, toys, or food. Parental input and recognition of the problem are vital. Parents must also be willing to spend some time eliminating the behavior and training other family members or caregivers. It is often helpful to explain to parents that the intensity of the undesirable behavior may increase before it drops off because the child is struggling for control. Some behaviors require the special consultation of a psychologist to plan appropriate programs.

GUIDELINES FOR BEHAVIOR MANAGEMENT

- Reinforcements change behavior.
- The most successful way to teach a new behavior is to break it down into simple steps.
- For a reinforcer to be effective, it must have special meaning or be desired.
- Pair reinforcements – verbal and physical praise (use tangibles as a last resort).
- The reward must come immediately after the behavior. Timing is the key.
- Some behavior will disappear if ignored.
- Time out is instantaneous, consistent, and short (15-30 seconds) for young children.
- To teach a new behavior, use shaping and fading techniques.
- Be consistent!!!

GROSS MOTOR SKILLS

PATTERN OF MOVEMENT

Assessing gross motor skills begins with observing the children. Allowing the children to become accustomed to the room and examiner encourages more effective evaluation. The children are allowed to freely explore the room; observing them at free play is crucial. As needed, the children are put in various positions (supine, prone, sitting, and standing) to observe patterns of movement. Additionally, quality (ease, consistency, appropriateness, and grading) of movement is analyzed.

While supine, children are asked to track moving objects and reach for toys. The position of the arms and legs indicates very quickly the underlying tone and primitive reflex integration: Are the children immobile when lying on the mat? Is there reciprocal kicking? Are antigravity movements of the arms and legs seen? Midline orientation of the hands and head is also noted. An important volitional movement is the ability of the children to play with their feet.

If the children are unable to roll to a prone position or do not do so spontaneously, we slowly rotate the pelvis, observing the pattern of movement (segmental or nonsegmental). The degree to which children are able to assist is noted. We may also observe children in a sidelying position to see if they are able to cocontract their trunk flexors and extensors.

In a prone position, head righting responses are assessed. Four-week-old infants should be able to rotate their head in a prone position. The ability to sustain the head position at 90° comes later. We note the placement of the children's arms in the prone position. Are they able to move them freely and above shoulder level to maintain forearm or extended elbow postures? Movements such as circular pivoting, combat crawling, and creeping on hands and knees are observed. We continually look for asymmetrical movement.

Whether or not children are able to get to a sitting position unassisted is noted as well as the need for support. If children are sitting independently, posture is very important to assess. Are legs tightly extended and the base of support too wide? Are legs flexed at the hip and the knee? Are children sitting with an erect back or on the base of the spine? Must they prop with their hands or are the hands free for movement? Various sitting positions may be used: long sitting, tailor sitting, side sitting, and reverse "W" sitting. (Reverse "W" sitting and tailor sitting are inappropriate for children with tone problems.)

In a standing position, children can be assessed for weight distribution and walking ability. We look for weight shifting and the position of the feet and legs. The children may be asked to cruise along a table, walk with two hands held, one hand held, or with no assistance. Gait is assessed in ambulatory children: Base of support, stride length, toe-off, and heelstrike are evaluated. Older children may be asked to climb stairs, run, or jump. However, most children do not reach these higher level goals prior to leaving the program.

Transitional movements (e.g., rolling and moving from a prone to a sitting position) are of great importance. Although most of our children move to a sitting position appropriately, some do not. Children with low tone may completely circumduct the legs 180° and then push up from a prone to a sitting position. Instead, these children should learn to roll to the side and push up or move over the legs from all fours to a side-sitting position.

Some children with high or low tone move directly from a prone position into "W" sitting, which should also be discouraged. We observe children maintaining tall-kneeling and half-kneeling positions. Their ability to come to a standing position is also noted. Do they use their arms or are they able to push equally with the legs? When coming to

a standing position independently, do they push up from the floor in a bear stand or can they use the more difficult half-kneeling position? While observing children standing and walking, we note the ease with which they can scoop and recover a toy from the floor. Squatting during play, a skill that children with high or low tone typically find difficult, is noted. Leg separation in walking is often missing in children with tone problems. Children with low tone use a waddling gait (more abduction than flexion), and children with high tone use a scissoring pattern if therapy is not introduced early.

Rotational patterns are also assessed. Because rotation is a combination of movements (both flexion and lateral flexion), it appears to be more difficult for children with tone problems. Rotational patterns are evaluated in rolling, sitting, creeping on all fours, and walking.

TONE

Tone plays an important role in attaining gross motor skills. It also plays a large role in all areas of development because children learn in a sensory motor environment. If children cannot move normally through play, they will be deprived of a vast number of sensory experiences. Therefore, it is very important for tone to be assessed properly.

Palpation of muscle bulk (consistency), resistance to passive movement (extensibility), and flapping with multiple quick stretches (passivity) are used. The different degrees of high tone and low tone may be very subtle. Observing tone changes with stress and movement in children is important.

Ligamentous stability is important to observe, especially in low-tone children. Because of an increased incidence of atlantoaxial dislocation and patellar instability in children with Down syndrome, we must carefully note the degree of stability present in the joints. Hip subluxation or dislocation must also be evaluated, as these can occur frequently in high- or low-tone children.

The distribution of tone over a child's body can vary greatly. In children with Down syndrome, overall body tone is low. In children with neuromotor dysfunction, we sometimes see increased tone in the extremities and decreased tone in the trunk. Children may have more tone on one side of the body than the other. Tone can also fluctuate from high to low or high to normal. Many variations exist, and changes in tone are important to note.

PRIMITIVE REFLEXES

Primitive reflexes play an important role in children's ability to move and interact with the world. The presence or absence of primitive reflexes at certain chronological ages indicates the maturity of the neurological system. The absence of postural reactions or the lingering presence of primitive reflexes is of great concern to the physical therapist. Of particular note are the following primitive reflexes: asymmetrical tonic neck reflex (Fig. 2A), tonic labyrinthine in prone and supine positions (Fig. 2B), the neonatal positive supporting reflex (Fig. 2C), and the symmetrical tonic neck reflex (Fig. 2D).

If primitive reflexes persist beyond a certain age, children will have little variety of movement. Movement will be initiated but only with abnormal responses. Dissociation of body parts is difficult to achieve because of reflexive movement patterns. Transitional movements are also difficult. Therefore, all reflexes must be assessed, and everyone who is involved in caregiving needs to be aware of ways to help children achieve more normal postures and movements by integrating them.

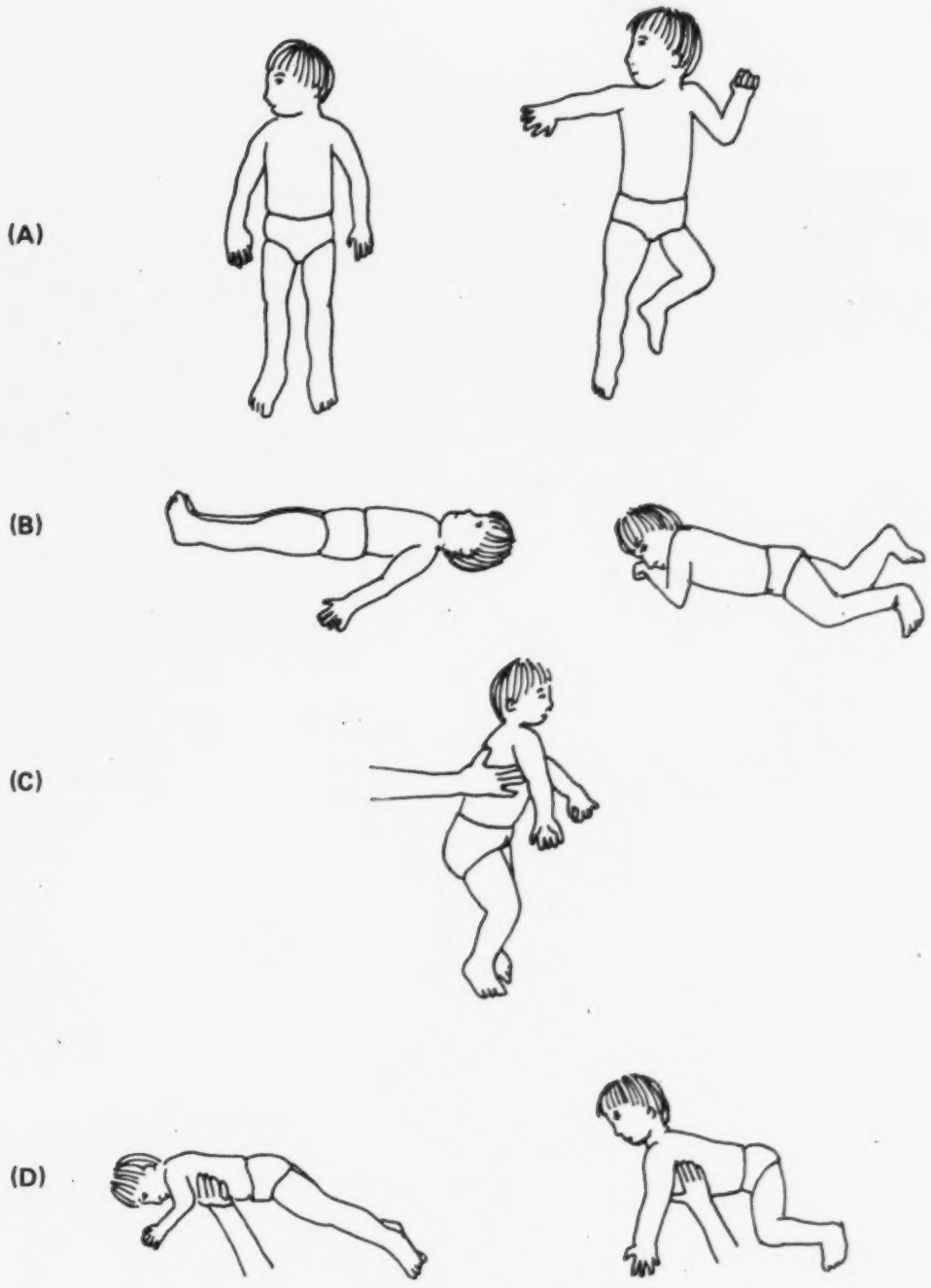


Figure 2. Primitive reflexes: (A) asymmetrical tonic neck reflex, (B) tonic labyrinthine in prone and supine positions, (C) neonatal positive supporting reflex, and (D) symmetrical tonic neck reflex.

POSTURAL REACTION

Children with tone problems may exhibit components of postural reflexes, but they can be poorly developed or sluggish. Postural reactions, such as equilibrium, righting, and protective extension, are primarily responsible for a child's ability to gain and maintain mobile postures against the force of gravity and the freedom of movement necessary to develop highly skilled activities. If children do not exhibit appropriate responses, not only will they be unable to maintain antigravity postures, they may also need to prop in a protective response limiting bilateral hand usage. They may also lack the skill necessary to perform a certain task in a variety of ways because of insecurity.

POSTURE

Musculoskeletal problems are often associated with tone problems. Asymmetry of movements or persistance of primitive reflexes may cause static postures that can result in joint or soft tissue contractures. As previously mentioned, there is an increased risk of atlantoaxial subluxations in the Down syndrome population and this must be monitored. Hip dislocation is common in children with neuromotor dysfunction. Scoliosis and kyphosis must also be monitored carefully. Patellar instability must be observed and may need surgical intervention. Pes planus (flat-footedness) is a very common problem for children with tone abnormalities. Appropriate shoes (with either inserts or arch support features) must be recommended. The position of the feet is crucial to a child's ability to stand and walk, and it must not be overlooked.

Posture should be observed in all positions: supine, prone, sitting, and standing. Adaptive equipment, such as specialized seating, may need to be recommended. Splinting, bracing, casting, or adaptive ambulation aids should be recommended by a physician or physical therapist.

DEVELOPMENTAL LEVEL

After all the aforementioned areas have been evaluated, gross motor developmental level is ascertained with an edited version of the revised Gesell Developmental Scale. For ease in handling the multiple item test, gross motor tasks and some fine motor tasks have been combined into one test (see Appendix 1). The Gesell is used most often because of its specificity of task items. The test begins at 4 weeks and is carefully scaled up to 3 years. The scale has been used since the 1940s but has been revised. Because it does not assess quality of movement, primitive reflexes, postural reactions, or tone, additional observations are needed to fully assess gross motor ability.

PLANNING INTERVENTION

Once an evaluation has been completed, intervention strategies are planned. Gross motor activities focus on development of head to toe control and proximal to distal control. Attention is given to normalizing tone as much as possible and to integrating primitive reflexes while facilitating postural reactions.

Parents are first taught basic handling, carrying, and positioning techniques. The importance of these aspects of daily life cannot be overstressed. Parents are taught how to hold and position the child. This aids greatly in the bonding of parents and child, because the parents are no longer afraid of handling the child improperly.

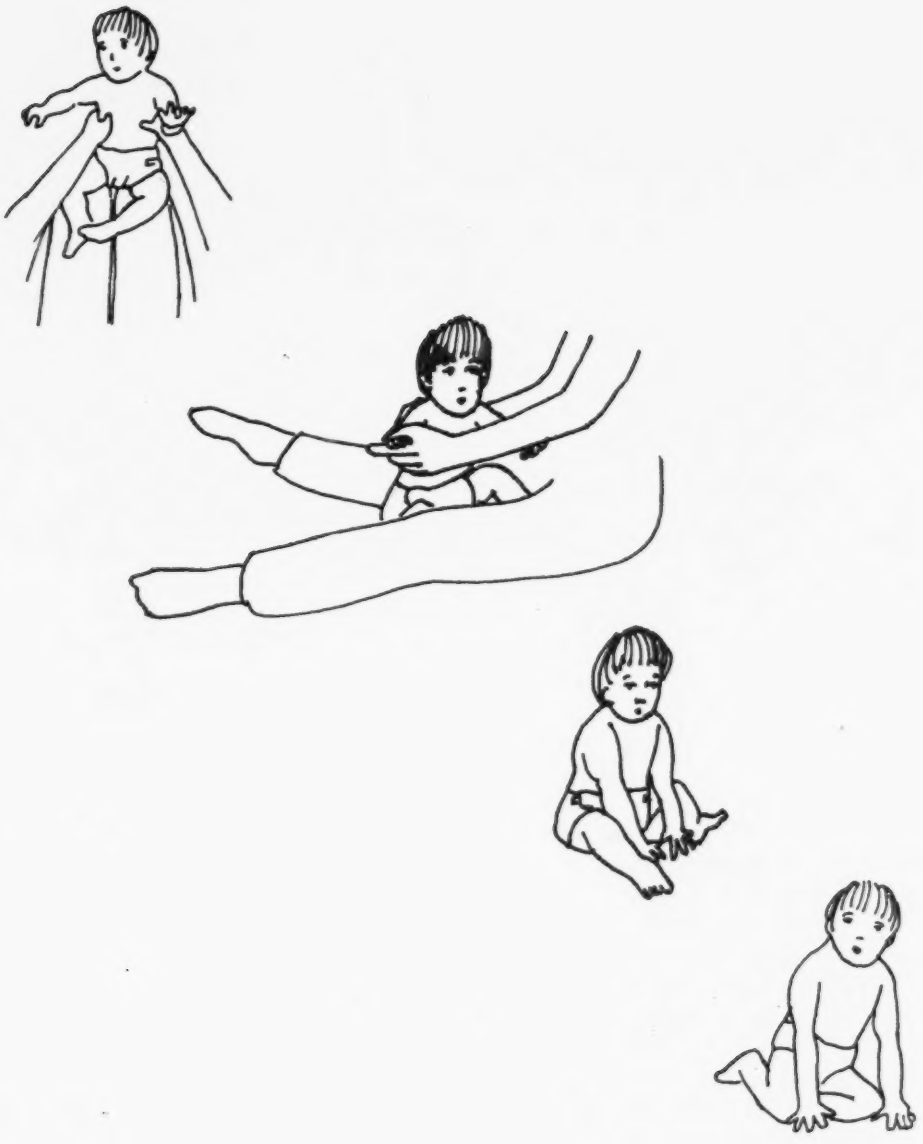


Figure 3. Various sitting positions.

Parent training includes activities to decrease or increase tone. Because all children do not respond equally, activities are planned individually (see sensory systems at the beginning of this chapter). It is essential that all who work with the children are able to inhibit or increase tone to get the optimal response. Special activities for children with mixed tone must be demonstrated by a physical therapist.

Inhibition and integration of primitive reflexes are another integral part of training. It is very helpful for a professional to describe observed patterns and explain to the parents the reasons children need to learn other patterns of movement. The more parents understand the children, the better handling they can provide throughout the day. Parents need to understand that their children do not need to be standing because of a neonatal positive supporting reflex. Explaining that "bunny hopping" is not a means of quality locomotion does not make sense to parents unless they understand the reason behind the movement and the skills that will not mature because of it. If parents understand what the tonic labyrinthine reflex looks like and the problems it causes, they may be more willing to use sidelying positions for the child.

Head control activities promote the first basic skill children must master. Towel rolls or wedges to provide leverage and a mechanical advantage are used. Labyrinthine head righting responses are elicited to work on head control on the beach ball and in vertical suspension. Sit-ups promote neck flexor control. Care should be taken with low-tone children. They should not be pulled by their arms or hands to a sitting position. Instead, the shoulders should be rounded by the parent's hands during the activity until they have sufficient stability.

Alternate positioning is demonstrated to the parents. Sidelying is an excellent position for children with an extensor thrust because it helps reduce the tone and allows the children to lie more comfortably with their hands in a functional position for play. It is also a good position for children with low tone because it requires cocontraction of the trunk musculature. Supine flexion is an alternative for children with tone problems, many of whom can never assume this normal position without assistance. By getting the back rounded with the hips in the air, the feet are in proximity for play. The stomach muscles are active in this position, and the children are able to inhibit the tonic labyrinthine reflex, symmetrical tonic neck reflex, and asymmetrical tonic neck reflex.

Sitting begins with appropriate head control. Various supported sitting positions are used: on a parent's flexed knees at eye level, between a parent's extended legs, on propped hands, or side sitting (Fig. 3). As soon as possible, appropriate independent sitting postures are emphasized, followed by rotation and weight shifting activities.

Mobility is first taught by rolling. Children are assisted and later asked to roll on their own. Parents are asked to roll the child about 6 feet one direction and then back. A toy is placed at each end to instill a cause-and-effect relationship, object permanence, and the use of rolling for locomotion. An incline or ironing board is used to provide antigravity rolling and to integrate primitive reflexes.

Early weight bearing on arms is taught by using the towel roll under the chest so children can get on extended arms; later, children are taught the wheelbarrow position (weight on hands with feet held in the air by an adult) and hands-and-knees position. Weight shifting is added by having a parent rock the child and later asking the child to reach for a toy. Where appropriate, controlled weight bearing in a standing position begins early. However, specific graded activities, such as tall-kneeling and half-kneeling, are used in parallel.

To encourage mobility on the stomach and on all fours, many techniques are used. The scooter board is a wonderful aid to encourage mobility. Towels placed under a child's stomach for support may be gently pulled to promote forward progression. Moving a lower limb out and up and letting a child push off a parent's hand can promote mobility.

Specific graded activities are essential to moving toward standing. Creeping provides hip stability for walking. Knee-walking begins with assistance and then occurs independently. Playing and coming to a stand from the half-kneeling position helps with weight bearing, balance, and dissociation of the legs. Children practice coming to a stand from a low stool, stack of books, or from a bolster. The bear stand (hands and feet on the floor with buttocks raised) is an excellent position for bearing weight on the hands and feet, integrating the symmetrical tonic neck reflex, and developing hip and trunk strength.

When first learning to stand, children are allowed to hold on to a couch or coffee table. Parents gently begin shifting weight at the pelvis. Once the children are cruising and walking with both hands held, activities are begun to decrease human support: pushing a weighted cart or holding on to a broom handle, holding children about the hips from behind or placing a towel roll around the chest frees their hands for balancing. Children can be placed against a wall and then asked to stand independently by reaching for toys that are held out.

Once children can walk independently, additional work ensures proper gait and development of gross motor skills by relying on rotational, stabilization, and equilibrium activities. Proper heelstrike can be achieved by walking children backwards quickly or having them use their toes to pick up marbles and place them in a nearby can. Walking up an incline can also help them attain proper heelstrike. Shoulder stability can be improved by wheelbarrow-walking. Kneewalking forwards, backwards, and sidewards aids hip stability. Small weights (1 pound or less) placed around the wrists or ankles may be utilized for proprioception and strengthening. Eye-foot coordination is promoted by children stepping on randomly spaced pieces of paper. Squat-stands and other graded activities are necessary to learn to jump.

Swimming, even for the youngest infants, is an excellent medium for learning gross motor skills. The bouyancy of the water makes it easier for children to attain muscle control. Water temperature must be appropriate to aid in normalizing tone: Cooler water (80°-84°) is needed for children with hypotonia, and warmer water (96°-100°) is necessary to reduce tone in hypertonic children. Proprioceptive and tactile input is increased in water. Activities include stomach floats, back floats, dipping, dunking, blowing bubbles, propelling a child through the water, arm and leg kicks, and jumping from the side of the pool.

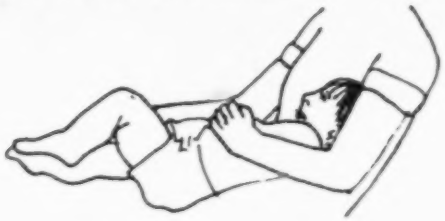
Equipment is not the most important part of our program. A parent's two hands and a child willing to work are the most basic tools. However, useful equipment includes beach balls, tilt boards, trampolines, and scooter boards. Electric vibration is helpful for some children.

CARRYING AND POSITIONING

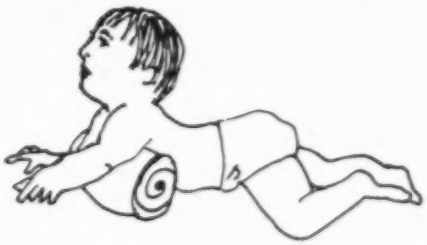
Purpose: To help your child gain better control of his body and to encourage movement.

1. Try not to support your child's head. Even from birth, an infant should begin trying to hold his head. Only after the child has begun to tire, should you attempt to support.

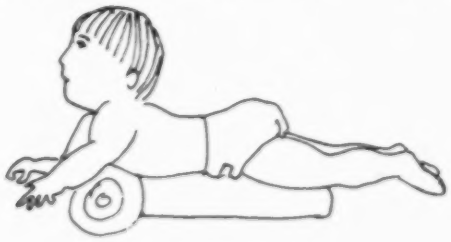
   The best technique to help your child control his head is to put your forearm around his neck at the bottom of his head and then curl the shoulders forward while controlling them with your forearm and hand.



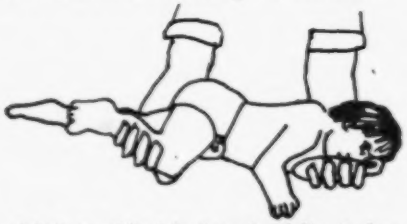
2. Many children are unable to lift their heads when lying on their stomachs. If a child lies on his stomach and is supported by a bolster or roller or is on an incline, he will be able to lift his head and at the same time straighten his back. Don't let his feet become stiff and pointed; spend a few minutes bending his ankles.



3. If your child thrusts his head back, arches his back, and straightens his legs tightly, place him over two bolsters with his arms forward and his legs bent on either side of a bolster. This is also a good position for children who are learning to get on hands and knees.



4. Never pick up a child by his arms. Turn him onto his side into a curled position, then slip your arms under his shoulders and legs to lift him.

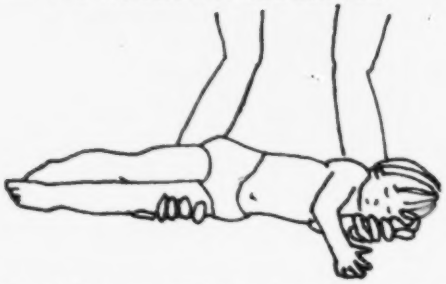


5. To encourage your child to lift his head while being carried, hold him in a football position. This position is best used when the child does not thrust his head or arch his back. By stroking his neck, you can stimulate him to lift his head.

6. If your child has increased muscle tone and is very heavy, the position below might be a better way to carry the child with his weight being better distributed.

7. If your child is large and difficult to handle, a swing position might be used.

8. Making a cradle with your arms and holding the child on your forearm enables him to see his environment and increase his head control.

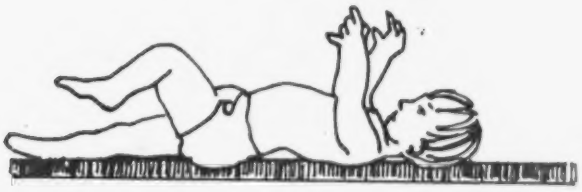


9. A young child should be encouraged to move about in bed. By alternating his position in bed, you can stimulate movement. Change the direction in which you place the child (i.e., if you normally place the baby with his head toward the east, alternate with his head placed toward the west). Place a child on his stomach and on his sides. Your child may have one preferred position and may cry when placed differently, but try all positions and do not always position him the same way.

10. Seat your child often: on your lap, in an infant seat, or propped up on a couch. Sitting stimulates the child to look at his surroundings and stimulates him to hold his head erect. Talk to a therapist or nurse about the best position for your child.

    If possible, place a strap between the child's legs to prevent him from slipping out of the bottom of a chair at first. Then, as he becomes better able to support himself, remove the pelvic strap.

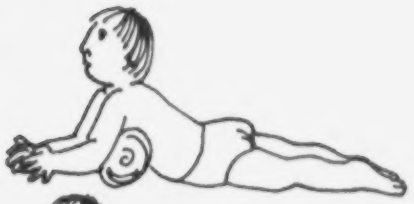
11. Don't leave a child in his bed all the time. Bring him into the room with you. Allow him to watch other members of the household. Also allow the child to experience different textures. Lay him on sheets, blankets, towels, rubber pads, carpet, and other things.



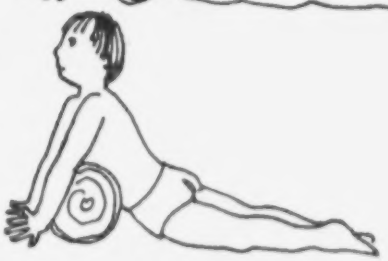
Adapted from White, Minor, and Connolly, 1977.

POSITIONING

- Towel roll for weight on forearms, 10-15 minutes several times each day



- Higher towel roll for weight on extended arms, 10-15 minutes several times each day



- Sidelying with the lower arm over head; if necessary, give support behind back or "sandwich" child with sandbags

- Sidelying with the lower arm bent and supporting weight

- Supported sitting, begin as soon as possible and as upright as possible

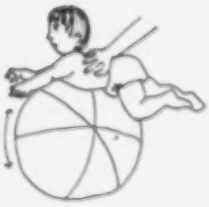
- Let the child "find" his feet from a flexed supine position

GROSS MOTOR ACTIVITIES

EMPHASIS: BEACH BALLS

1. Place the child on his stomach on a beach ball and rock him back and forth quickly to increase his tone. Go slowly to decrease tone and keep at least one knee flexed.

2. Place the child on his stomach on the beach ball. Hold him at the waist. Gently tilt him to the side so he uses his lateral trunk muscles to hold on. You may see a curve to that side. Now go to the other side. Go to each side five times. If the child has increased tone, flex at least one knee.



3. Seat the child on a beach ball facing you. Hold him at the waist. Gently tilt the ball to the side and let the child try to right himself. Then tilt the ball back and then front. Go to each direction five times.

4. Place the child on his stomach on a beach ball facing you. Lift his arms up and out to stimulate him to lift his head as you roll him toward you. Do ten times.

GROSS MOTOR ACTIVITIES

EMPHASIS: TRAMPOLINE

1. Place your child on his back on the trampoline and begin bouncing. Gently bounce him for several minutes and then bounce him on his stomach. These exercises increase tone and help the child find his body in space.

2. Seat your child on a trampoline and begin bouncing. If he falls over, pick him up and keep bouncing.

3. Bounce your child while standing and holding his hands.

EMPHASIS: TILT BOARD

1. Place the child on his stomach on a tilt board and tilt him from side to side. Then put him on his back and repeat the exercise.

2. Seat your child on a tilt board. Gently tilt him from side to side, holding the tilt to make him work. Then turn him around so you can tilt him from back to front.

3. Try holding the child in a standing position. If possible, tilt him. If you can't, hold him and move the board a little.

NOTE: At home, use a mattress for a trampoline and a pillow from the couch for a tilt board.

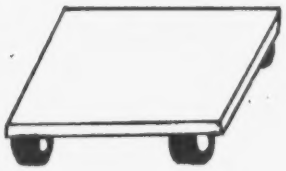
EMPHASIS: SCOOTER BOARDS

What is a Scooter Board?

A scooter board is an easily constructed wheeled toy that can be used in many ways to help your child develop motor skills. Children will enjoy the scooter board throughout childhood.

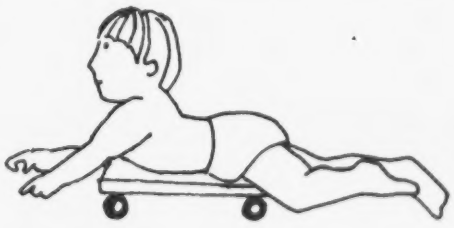
How to Make One

A sturdy scooter board can be constructed from a 20-inch by 12-inch piece of 2-inch thick wood or plywood to which four pivoting caster wheels are attached. For safety, round the corners of the board and make sure the top surface of the board is smooth. The casters should be attached to the underside of the board about 2 inches from each corner.



What is the Scooter Board Used For?

1. Trunk and upper extremities
   The child lies on his stomach lengthwise on the scooter board and propels himself with his hands. This activity helps increase shoulder stability; aids extension of the neck, back, and hips; and provides reciprocal movements of the arms (the arms doing different things). It also works on flexion/extension patterns of the shoulders and elbows and helps the child improve motor planning and coordination as he propels himself from place to place.



2. Lower extremities
   The child sits on the board and propels himself with his feet. This helps increase stability of the hips and knees, flexion/extension patterns of the legs, provides reciprocal movements of the legs, and helps improve motor planning and coordination.

3. Abdominals
   The child lies on his back on the scooter board and propels himself with his feet. In addition to the benefits given in 2, above, this is an excellent means to increase the tone and strength of abdominal muscles. This is to be done by an older child (3-4 years).

Scooter Board Activities

When you first put your child on the scooter board, you may have to help him move his arms or legs until he learns how to move himself.

When first using the board, it is often easier for a child to move himself backwards than to move forward. That's fine, but encourage him to learn to move forward, turn corners, and go in circles.

Obstacle courses can be set up so the child has to learn how to negotiate turns and go around objects. This is a good activity to help your child improve his motor planning abilities, and it's fun!

Use your imagination to devise many different games and activities that are appropriate for your child as he grows. A scooter board is a toy that your child will not outgrow for many years.

FINE MOTOR SKILLS

REFLEX ACTION AND THE EMERGENCE OF VOLUNTARY GRASP

Children first exhibit reflex patterns of movement in the upper extremities. Voluntary grasping begins crudely and becomes more refined with maturation. An infant's hand is tightly clenched with the thumb outside the fingers. Soon infants are able to scratch or finger their own clothes or hair. At this point, hands should be loosely closed or open. During this same period, infants begin to move their arms at the sight of a toy and are able to bring their hands to midline, a major motor milestone. Next, infants begin to take toys placed in their hands to their mouth for further exploration. They may bring the fingers of the free hand up to play with the toys. After they begin swiping at toys, they begin reaching with both hands. They may even be able to take and hold a cube in their hands. Around 7 months, infants are reaching with both hands to get a toy, no longer a task of hit or miss. Transferring a toy from one hand to the other occurs about this time, and banging a toy in a vertical plane occurs before infants are able to combine two toys in a horizontal plane. By 9 months, infants can pick up and hold a cube with the ends of the thumb, index finger, and middle finger.

Voluntary release comes after control in grasping objects. Around 8 months, children can remove cubes from a cup, an action that is a precursor to releasing. Several months later, children begin to place cubes in a cup without letting go. We may also see a clumsy or exaggerated release of the cube. By 1 year, children are placing two cubes in a cup spontaneously.

To assess fine motor control of very small items, we put raisins or Cheerios on a table in front of the children to see what they will do. Normally they will first grasp a raisin with the whole hand in a raking motion. Orientation to the object occurs next with the ulnar side of the hand and then with the radial side. Later, children are able to pick up the object with thumb, index finger, and middle finger. With more refinement; children begin to use only the index finger and thumb, first with a lateral pincer (thumb to the side of the index finger) and later with an inferior pincer (thumb to the base of the index finger). The highest skill involves the tip of the index finger opposed to the thumb, a superior pincer.

Assessing higher level skills includes giving children several cubes and watching them build a tower or align blocks to make a train. We also observe the children with a crayon. Usually they will begin by making tapping marks on the paper before scribbling. We try to get children to imitate vertical strokes first, then horizontal strokes. Because of the young developmental age of most of our children, they do not attain higher drawing skills such as imitating a circle or a cross.

We also assess individual finger use. Around 9 months, children begin poking with fingers. Giving children a toy telephone with a dial or a bottle with a small opening is a good way to observe their ability.

Supination and pronation can be evaluated by watching children play with a wind-up toy or a lidded jar, although these skills are rarely seen in our children because of the difficulty of the skills. Around 1 year of age, children should be able to turn a page that has been started for them. Children of 18 months are able to turn two to three pages at a time.

The Gesell formboard with its three simple shapes is helpful in evaluating abilities with shapes. Around 11 months, children can remove a round block and may attempt to replace it. Next, they learn through demonstration to replace it and can do so by 13 months. By 18 months, children can replace all three shapes with minimal assistance. Because many of our children leave the program to begin a 2-year-old preschool class, higher level skills (e.g., shape sorting) are not assessed.

HAND DOMINANCE

Children show signs of hand dominance around the age of 3. As our program extends to only age 3 and most children have cognitive and physical delays, full hand dominance may not be established. Therefore, it is very important for us to observe asymmetries in movement or hand use. Mild hemiplegias can be missed without careful observation. We assess reaching with both hands and often with one arm restrained. A pincer or manipulation of small items is always tested bilaterally.

DEVELOPMENTAL LEVEL

We often use the Denver Developmental Screening Test to estimate a child's fine motor abilities and compare them to other areas of development. The Lexington Developmental Scale and the revised Gesell Developmental Scale are also helpful. Because asymmetries, tremors, and quality of movement are not scored by these tests, these actions must be closely watched and assessed.

PLANNING INTERVENTION

As previously mentioned, development occurs cephalocaudally and proximal to distal. General activities are subsequently refined. These same principles apply to fine motor skill development.

Visual stimulation is used to start children on the road to fine motor skill development. Brightly colored toys that encourage focusing and tracking are used in a variety of positions. Tactile stimulation helps children become aware of their hands and to enjoy activities using them. Textures such as pudding, sand, water, rice, and beans are excellent media for exploration. Activities to bring hands to midline, such as sidelying or playing with the feet, are also demonstrated. Active weightbearing on the hands is greatly encouraged. Transferring a toy from one hand to another, holding a toy in both hands at the same time, and banging two toys are taught. Squeeze toys are fun. Because some plastics are very hard, we ask parents to buy animal toys at a pet store. These toys tend to be very soft and give instant auditory feedback. When children are developmentally ready, activities such as removing and replacing toys in containers begin. Use of the pincer grasp instead of grasping with the whole hand is taught in steps using bits of cookies, Cheerios, pieces of yarn, or puzzles with knobs. Telephones and Play-Doh encourage individual finger use. With older children, tasks are more cognitively based with crayon drawing, simple puzzles, and elementary shape sorting.

TRACKING ACTIVITIES

Fine motor skills are really our ability to use our hands. Hands enable us to perform many intricate but essential tasks such as buttoning buttons, picking up small objects, or turning a page in a book. To gain effective fine motor skills, hand-eye coordination must be developed. This requires development of eye control and hand control.

HAND CONTROL

1. When feeding your child (breast or bottle), place his hands on the breast or bottle to stimulate hand opening. This also provides a positive cause-and-effect association. (Bottles may be covered with terry cloth or a silky scarf for increased pleasure and positive association.)

2. Place the child on his stomach on a covered surface. Take off his clothing except a diaper. Rub his hands, palm side down, across cloth. Your goal is for him to grasp the material; this may take a while. Talk to the child while he is playing. Change textures frequently.

3. Stroke the back of your child's hands to elicit finger extension. Then place a toy in his palm to stimulate the grasp reflex. Vary the items: towel, rattle, finger, cloth. Talk with him while you play.

EYE CONTROL

With your child lying on his back,

1. Hold a brightly colored, noise-making object at eye level 15" from his face. Slowly move the object toward midline. Talk to your child as you play. Move the object from the midline to all four quadrants.

2. After your child has mastered tracking as described in activity 1, work with him to gain control moving away from midline. With practice, he should follow an object 180° laterally and approximately 100° vertically.

3. When holding your child, keep your face within 7" to 24" of him. Nod your head, smile, talk to him, keeping his head in midline and trying to gain eye contact. Gradually progress to moving your head laterally a few degrees to each side. You should start this activity at 7" from the child and move away as his skill increases.

HAND ACTIVITIES

1. Rub-a-dub. Gently rub your child's hands, arms, legs, and feet with a variety of textured materials:

   a. Terry washcloth
   b. Sponges
   c. Piece of carpet
   d. Lamb's wool
   e. Ice

2. Tie bells on your child's shoes or sew bells on elastic wristlets. Leave bells on the child for about 15 minutes at a time.

3. Place a diaper or piece of material over the child's head and face and encourage him to pull it off.

4. Lightly wrap brightly colored yarn around and in between the child's fingers of one hand and encourage him to pull it off with the other hand. Alternate hands.

5. Place a brightly colored toy on the child's chest and try to get him to bat at the toy.

6. Put mittens, puppets, or thimbles on your child's hands and encourage him to look at his hands and then later have him pull the mittens off.

7. Give small grasping toys or parts of toys to your child to grasp and examine: rattles, bells, squeeze toys, pop beads, plastic ring with string attached.

8. Lay the child on his back and dangle a toy about 6" above his head. Encourage him to reach for the toy. If he does not, take his hand in yours and bat at the toy. Decrease your assistance as the child does more on his own.

9. Repeat 8 with the child supported in a sitting position.

10. Place Scotch tape on the child's palm to get him to open and close the hand. Before doing this check with the therapist to determine if the child has a reflexive grasp.

11. Place tape between the fingers to make your child more aware of each individual finger.

12. Place objects in the child's hand and try to get him to hold them for at least 30 seconds.

13. Once the child is holding the toy, try to get him to move his arm (to rattle the toy). Use hand-on-hand guidance if necessary.

14. Engage the child in sand and water play. Place ice cubes or toys in the water. Encourage him to reach in and pick them up. Use food coloring to color the water or add bubbles.

15. Bury objects in the sand, and help the child find them. Seat your child in the sand so he can feel the sand on his feet and legs as well as on his hands.

16. Provide dry cereal, raisins, or other small finger foods at meals and snacks. Encourage the child to pick up the objects.

17. Tie brightly colored yarn onto small toys for the child to manipulate.

18. Provide toys with buttons to push, dials to turn, and strings to pull:

    Toy telephone
    Toy cash register
    Talking dolls or toys with pull strings
    Busy box
    Jack-in-the-box
    Toy piano

19. Provide soft dough for the child to pinch or poke with his fingers.

FINE MOTOR SKILL ACTIVITIES

Determine which hand skills your child has by giving him a block, finding his response below, and working on the next level.

1. Transfer a toy: move a block from one hand to the other. If your child is not doing this, help him by guiding his hand and the toy.

2. Bang two blocks together. If your child is not doing this, first encourage him to hold a toy in both hands. Show him how to bang the cubes together. Try this at home with different toys (rattles or spoons).

3. Remove a block. Can your child reach in a container and pick out a block? Help him with hand-on-hand guidance if necessary.

4. Replace a block. Demonstrate by placing a block in a container. Ask him to do it. If he can't, help him by placing your hand on the back of his hand and slipping your finger in to release the block.

5. Pincer. Does your child use his whole hand to pick up a Cheerio? As his skills improve, he will pick up small objects with his thumb and first two fingers. Next he will use his forefinger and thumb. To facilitate a pincer, give your child small bites of crackers at each meal or snack. You may also want to let him get a piece of yarn (with supervision) that is wrapped between his fingers. Handing the child a small bite held between your thumb and forefinger is also helpful. As he grows more skilled, encourage him to pick up a variety of small things such as pennies, kernels of popcorn, and beans. Stringing a shoestring through a macaroni shell is an advanced task.

6. To encourage individual finger use, try

   - Dialing a telephone
   - Play-Doh
   - Pop-N-Pals
   - Toy piano
   - Pointing to pictures in a book

FINGER PAINTING

EQUIPMENT

Food colorings
Paper to cover table
Masking tape to hold down paper
Wet towels for clean up

Instant pudding should be used instead of paint in case the children try to eat it. But they should not be encouraged to eat the pudding; pretend it is real paint!

OBJECTIVES

1. Develop fine motor coordination and strength.
2. Encourage creativity and imaginative play.
3. Stimulate tactile receptors.

DIRECTIONS

1. Seat your child in a chair at a table that is chest high. Cover table with white paper and secure with tape.
2. Put a spoonful of colored pudding on the table in front of your child. Verbalize the situation for your child: "Look, _____ , it's red paint. Let's put our hand in the red paint. It's cold and squishy. Let's make a picture with our finger." Help your child move his hand around in the pudding and spread it around. Let him move his hands freely, experimenting with arm and hand movements.
3. Assist your child with hand-on-hand guidance to use his index finger to draw a design, a vertical line first. Then help him draw a circle. Verbalize the situation for your child. "Let's draw a picture, _____ ! You are moving your hand in the paint. Let's make a line with your finger [as you are doing the action]. You made a line [circle] with your finger. Let's make another picture [line, circle] ."
4. Give your child a spoonful of another color and then help him experiment mixing the colors and making various designs in the paint.
5. Add new colors one at a time. Make sure you talk to your child about what is going on. Verbalize the situation for him.
6. Make a line in pudding and then tell your child to imitate without assistance. Wait a few seconds to see if he will. If not, assist him with hand-on-hand guidance. Continue to verbalize the situation for him.

FINE MOTOR ACTIVITIES

Before beginning tasks, rub your child's hands with different textures and do some wheelbarrow walking on the floor.

Please comment on your child's response to each activity and how much and what kind of assistance he needed for each task.

1. Give paper and crayon.
2. Imitate a circle drawn on paper.
3. Imitate a vertical line drawn on paper.
4. Build a three-block bridge with blocks (this activity is new; your child usually stacks blocks so you may have to make him pay close attention to the demonstration).
5. Hand the pieces of a formboard to the child one at a time in the following order:
   - Circle
   - Square
   - Triangle
   - Rectangle
6. Change the order. Is your child's success rate the same?
7. Put a square block in the shape sorting box (this is difficult; take time).
8. String beads on a stiff string.
9. Unscrew barrels.
10. Get raisin out of small box.
11. If you've finished, congratulations. Now play with a puppet and record your child's response.

GAMES FOR LEARNING

GAME

Roll, then toss, large texture ball, foam rubber ball, and rubber ball back and forth (from one child to another).

Provide help as needed in playing. Reward success with "good rolling."

The ball game will help your child to

1. Focus on a moving object
2. Develop skill in using both hands in handling objects
3. Develop protective response by placing hands in front of face
4. Follow verbal commands ("throw the ball" or "get the ball")
5. Recognize different textures

GAME

Give children pop beads and a container. Show them how to pull off the pop beads and place in container by placing your hands over the child's and saying "pull off."

Hearing the bead drop into the container is reinforcement to do another. Reward with "Good, you put the bead in."

The pop bead game will help your child learn to

1. Follow verbal directions
2. Imitate models
3. Grasp and release articles
4. Focus attention and vision on activity
5. Gain tactile awareness

ORAL MOTOR DEVELOPMENT

An aspect of development that may be overlooked in early intervention is oral motor development, an important part of our overall program planning because it is vital to other areas of development such as physical growth, speech and language, feeding skills, and oral hygiene.

Infants need adequate oral motor control in order to suck and swallow properly. If unable to use the oral mechanisms in a coordinated pattern, they may be unable to get proper nutrition to thrive without the use of a gastrostomy or nasogastric tube. Later, children must have good tongue mobility, lip closure, and graded jaw movements to chew properly.

Children with poor oral motor control have difficulty with speech development. Head support, lip closure, jaw approximation, and tongue mobility are prerequisites for speech development. Proper movement of the lips, tongue, and jaw are also needed to ensure good articulation of words.

Children who have problems associated with low muscle tone tend to have open mouth postures. The tongue may be either forward or retracted. Mouth breathing, which is detrimental to teeth and gingival tissue, can occur. The mouth is continually dry, gums may deteriorate more rapidly, and children are more prone to gum diseases. An open mouth posture and a protruding tongue can create poor teeth alignment, which causes difficulties in approximating these teeth for biting or chewing. Drooling is also typical. Good oral hygiene depends on adequate oral motor functioning.

ASSESSMENT

Much of the assessment of oral motor development requires expertise from trained professionals: occupational therapists, physical therapists, speech and language pathologists, nutritionists, or nurses. However, principles of normal oral motor development must be learned by the EIP team. The ability to assess oral reflexes such as rooting, sucking, gagging, palmar-mental, tonic, and phasic bite is needed. We evaluate lip control, tongue mobility, jaw stabilization, and muscle tone in a variety of ways, depending on the child's developmental age.

We observe the newborn's ability to form a seal on a bottle. Strength of suck can be assessed by giving resistance to the nipple. The ability to coordinate sucking and swallowing should be observed, and velocity, rhythm, endurance, and length of feeding time should be recorded.

At the appropriate age, infants are observed while being fed with a spoon. Several food textures are used. Tone of the cheeks, lips, and tongue is noted. The use of the lips to clean the spoon and the use of the tongue to clean the lips are observed. We also look at mobility of the tongue in moving food from side to side in the mouth.

Food may be placed over the molar area to elicit a munching pattern that should precede development of a rotary chewing pattern. Food may also be placed in the pocket of a cheek to see whether children are able to retrieve food by lateralizing the tongue.

Cup drinking allows us to observe jaw stabilization and lip closure. We look for leakage and suck-swallow coordination. The ability of the jaw to dissociate from the tongue is also observed. Straw drinking may also be assessed.

Children's ability to handle saliva production is noted. While drooling is very difficult to measure objectively, we all have subjective feelings when drooling is excessive or abnormal. Other factors to note aside from poor oral motor control when assessing drooling are developmental age and eruption of teeth. Intervention is required if drooling is excessive because of poor oral motor functioning.

INTERVENTION

Once muscle tone, reflexes, and developmental level have been assessed, intervention can begin. Activities begin early to encourage parents and children to become aware of oral motor skills. To create a stronger sucking pattern, mothers may be asked to give resistance to the nipple while their infants are drinking: By slightly pulling the bottle outward several times during feeding, mothers encourage infants to use their cheeks and lips to keep the bottle in their mouth. To improve sucking, mothers can try downward pressure of the nipple on the tongue. Muscle tone can be increased in the cheeks and lips by playing "patting" games on them. Stroking firmly around the lips will cause them to pucker.

To feel what the tongue is doing, mothers can dip their fingers in formula, place a finger in a child's mouth, and allow the child to suck the liquid. If the tongue is not cupping normally, activities such as downward bouncing and patting can be done to normalize tone. To obtain central grooving of the tongue, we try gentle stroking. Tools to use include a parent's finger, the child's finger, soft toys from the pet store, or small toothbrushes. Suggestions also include using rhythmical music and rocking to help coordinate movement. Singing is also very soothing to the child.

Some odors enhance sucking (vanilla, ammonia, acetic acid, and oil of cloves). While we use these very infrequently, they have been found to be useful.

To encourage munching, an auditory and tactile cue is sometimes used. Placing a small piece of a cornflake over the molar area will provide children with additional sensory input from the crunch and crispness of the flake. Small bits of graham crackers can be placed in the cheek alongside the teeth to improve tongue lateralization skills. Placing peanut butter or molasses in different areas inside the mouth and on the lips aids children in learning a variety of tongue movements. Sometimes we use a pretzel stick or celery stick for resistive exercises. By touching the tongue behind the tip or along the sides with the stick and then moving it to the side of the mouth, we can stimulate the tongue to follow and then give slight resistance.

To encourage more lip activity, we work on kissing and puckering. It is fun for the older children to put on lipstick and kiss pieces of paper. Blowing ping pong balls or cotton balls is also fun. Younger children may be encouraged to blow a tissue held in front of them. Imitating facial expressions such as blowing a kiss, opening the mouth widely, wrinkling the nose and saying 'ooooo" all encourage better oral motor control.

Straw drinking is an excellent activity to stimulate lip closure. Most parents in our program are thrilled with this accomplishment because it provides ease in travelling and freedom from spilled drinks in the car. To help children associate getting refreshment from the straw, we use a short straw (3"-5") with the liquid trapped inside by an adult's thumb. Children put the open end in their mouth, and the fluid is released when they close their lips on the straw. As children become more skilled, the straw is lowered so they must pull to get the fluid out. For some children, it may be helpful to put a short straw on the end of a squeeze bottle and force the liquid up the straw until the child learns to suck, and then gradually remove the assistance. Some children may require more tactile input to form a seal, and a plastic cutout can be placed around the straw next to the lips to help with lip closure. Once straw drinking is accomplished, longer straws and "crazy" straws keep straw drinking a challenge.

Electric vibration can be used with some success. Children appear to respond fairly quickly to the stimulation. Oral activities need to be done immediately after vibration to benefit the child.

For many years we have used quick icing on our children. We use ice popsicles and frozen grapes. The area outside the lips is circled about three times with the ice and then patted dry with a towel. For some children, this procedure has provided better lip closure and less drooling.

LANGUAGE SKILLS

Spoken language is the major form of communication for human beings. Language is a code consisting of a system of arbitrary signals used to express ideas. Learning to talk or use language efficiently is an unconscious act for most people. However, not everyone learns language this easily. Children who are developmentally delayed appear to acquire language as normal children do, but at a slower pace, and they require additional stimulation to aid their linguistic development. These children understand and use language that is equivalent to their mental age rather than to their chronological age.

Assessment of language skills in the Early Intervention Program consists of clinical observations of the children during play and feeding activities and while interacting with their parents. Continuous observation throughout the EIP sessions is important because the children show changes from week to week.

Assessment also uses formal and informal testing and encompasses prelinguistic, linguistic, and speech skills. We use parent reports and informant interview scales to obtain further information about a child's level of language functioning. Parents are our greatest source of information concerning very young children, especially when they have been performing differently at home. The Verbal Language Development Scale and the Receptive-Expressive Emergent Language Scale (REEL) are informant interview scales that assess overall language functioning.

Specific cognitive milestones must be achieved prior to language development. Communication is an active, two-way process, usually occurring first between parent and child. Children become motivated to talk when an object or person is of special interest to them. Object permanence is the knowledge that objects exist in time and space even when they cannot be seen or acted upon. Object permanence causes children to express wants, needs, or ideas about an object or person that is no longer visible. Object permanence is assessed by creating a situation to interest children. By using a favorite object or toy, the following activities are used:

1. Follow a slowly moving object through a 180° arc.
2. Find an object partially covered.
3. Retrieve an object completely hidden.
4. Find objects with a series of invisible displacement (change position of a hidden object behind a cardboard screen).

We also assess means-end schemes – the ability to use a person or object to obtain a goal. Means-end schemes offer children an opportunity to solve a problem while learning to use a tool and relating to objects. The following means-end schemes are assessed:

1. Grasp a presented object.
2. Repeat actions that produce interesting results.
3. Let go of an object to reach for another object.

We assess symbolic play, which involves pretending that one object is another or pretending actions of different circumstances. Language and pretend play both require that children mentally represent reality. Then, the act of talking allows children to express verbally the mental representations already expressed through play activities.

The earliest precursors of language are the prelinguistic communicative intentions of infants. These are skills that must be developed prior to producing true words. Prelinguistic skills appear to have a systematic, orderly method of development. It is often appropriate to include prelinguistic goals in the therapy plan for developmentally delayed children. Receptive language involves comprehending or understanding spoken language. Prelinguistic receptive language is measured by observing whether children

1. Are startled by loud noises
2. Stop an activity in response to a sound
3. Localize speaker with eyes
4. Respond to their own name
5. Appear to listen to music or singing
6. Give toys or objects upon verbal request
7. Follow simple, one-part commands
8. Recognize objects, pictures, or body parts when named

Expressive language involves sounds produced by children. We assess children's expressive language according to acquisition of skills in developmental order:

1. Crying and early automatic vocalizations
2. Differentiated crying (for hunger, pain, wet)
3. Cooing (a sound similar to vowels such as "oo" and "ah")
4. Babbling (speech-like combinations of consonants and vowels)
5. Echolalia (imitates sounds, words, and inflections of adult speech)
6. First true words
7. Jargon (sounds like real connected speech but lack true words)

Therapy may focus on preliminary skills such as eye contact, sitting, task-oriented behavior, and whether or not gestural communication is present. It may be necessary to teach these skills if children are not performing them consistently and if their lack of skills is interfering with learning true language.

After assessing each child in the areas of receptive and expressive language skills, individual long-term objectives are prepared. We include criteria for most of the objectives, depending on the child's ability and the specific goal. The following are examples of the Early Intervention Program's receptive and expressive language goals:

Receptive

1. Imitate actions while manipulating toys or objects
2. Imitate facial and body movements
3. Follow simple, one-part commands
4. Respond appropriately when name is called
5. Point to objects, pictures, and body parts upon request

Expressive

1. Engage in vocal play, producing vowel sounds or consonant-vowel repetitions
2. Imitate environmental sounds (car noises, animal sounds)
3. Increase vocabulary
4. Produce own name and classmates' names
5. Produce two-word utterances

We work on these tasks during each session. The goal is achieved when children are consistently successful with a given task. We strive for generalization or carry-over of each task to outside environments.

The most appropriate environment for stimulating children's language development is one that provides meaningful situations presented by individuals who are highly motivated and willing to take the time to talk to children. Specific toys or objects are not always necessary for language learning. Daily activities revolving around the child, such as feeding, dressing, and bathing, provide the perfect occasion for language stimulation. When working with children, we continuously bombard them with descriptive words and utterances, such as "I'm taking your sock off." To encourage children to use language, we must learn to simplify our speech (for example, "sock off"). As children learn speech and begin producing two- and three-word utterances, we begin to expand our own utterances, yet keeping them simple so the children can understand. We must stress the importance of talking around the child with adult language. Children need to hear language spoken by adults, not "baby talk" (i.e., "How's my wittle, bitty baby today?").

If children do not spontaneously produce babbling vocalizations, a speech or language pathologist can supply them with babbling sounds to be imitated. As we hear consonant sounds produced by children, we attempt to reproduce the sounds and expand them with consonant-vowel repetitions. To initiate babbling, we choose sounds that provide both visual and tactile stimulation for the child, such as "ba" or "ma." These may be easily produced when accompanied with the right object, such as ball for "ba" or the child's mother for "ma." A mirror is always helpful when engaging in vocal play with children.

Most parents of developmentally delayed children need helpful hints for providing good language stimulation to their children, although many of the parents already provide excellent language stimulation without realizing it. Encourage the parents and provide reinforcement that they are doing a good job and should continue their efforts. A speech or language pathologist can offer suggestions and provide parents and children with a good model.

HEALTH CARE

While primary health care is not provided by the Early Intervention Program, observation and early detection of illness are responsibilities the faculty assumes. Changes in health status are noted and appropriate referrals made. Safety and accident prevention are stressed. Immunizations for children in the program must be current.

Much health-related teaching is provided for parents: signs and symptoms of ear infection, proper administration of medications to infants, and ways to moderate activities for infants with heart defects.

The staff is always alert to seizures, which are common in developmentally delayed infants and young children. Involuntary movements, jerks, eye blinking, staring, and mental lapses may be signs of seizure activity. Once seizures have been diagnosed and treatment initiated, observation continues to assist in determining if the seizures are under control.

NUTRITION

Each child participating in EIP receives a nutrition evaluation shortly before or after entering the program. This evaluation includes a determination of feeding skill level, adequacy of diet, past and present growth status, factors affecting nutritional status, and other baseline information.

Once in the program, each child's growth, feeding skill development, diet, behaviors at mealtimes, and food consistency (e.g., strained, chopped, or whole) are monitored (see Appendix 2).

GROWTH MEASUREMENTS

Growth is monitored by measuring length and weight at least once during the semester. Children whose weight is below 85 percent or above 100 percent of the mean weight for their length-age are measured more frequently.

Measurements are obtained by two licensed practical nurses. Standardized equipment for determining weight and length are also used.

We maintain records on length-age (age at which length crosses the National Center for Health Statistics 50th percentile) (NCHS 1976) and mean weight for length (weight that corresponds to the length-age). A child's weight is then divided by the mean weight for current length-age and recorded as a percentage, which provides the team with a quick standard of reference of the appropriateness of each child's weight. For instance, children with Down syndrome should maintain their weight for length between 90 to 95 percent of the mean weight for length.

Parent-specific adjustments for length (Himes, Roche, and Thissen 1981) are determined for children whose length is below the 5th or above the 95th percentile (NCHS) for their age. This adjustment identifies whether extreme shortness or tallness results from a genetic influence.

Adjustments for prematurity are made for children under 12 months. Chronological and gestational age are identified on the growth charts. Parents are given copies of the growth charts with an explanation, and counseling is provided parents with children who are over- or underweight.

ADEQUACY OF DIETARY INTAKE

The adequacy and appropriateness of diet for a specific age are assessed continuously by the team nutritionist. A 24-hour recall of food intake is used as a screening tool to determine the need for in-depth assessment. Diets that fail screening (e.g., diets that do not provide recommended amounts of the four basic food groups or a formula that provides insufficient volume) are given further attention. If their child's diet fails screening, parents are instructed to keep a 3-day food diary that provides a full description of each food item and beverage consumed.

Food diaries are computer-analyzed for macro- and micronutrients such as calories, carbohydrates, protein, fat, and selected vitamins and minerals. A child's intake is compared with the Recommended Dietary Allowance (National Research Council 1980) for a child the same age and sex. Caloric intake per kilogram of body weight and per centimeter is also provided. The results of the analysis are shared with the parents and a plan is developed to remedy any deficiencies or excesses.

Efforts are made to provide parents with sound nutrition information while their children are infants. This anticipatory guidance is invaluable in preventing unsound dietary practices. Families are encouraged to follow their pediatrician's advice for nutrition and eating, which should include

1. Human milk or iron-fortified infant formula until a minimum of 12 months of age
2. Introduction of iron-fortified infant cereal at 5-6 months of age
3. Use of a spoon for all solids, avoiding nippled feeders and bottles
4. Gradual addition of strained foods to detect food intolerances or allergies
5. Use of single item foods such as plain meats, instead of dinners
6. Avoidance of mixing preferred foods with nonpreferred foods, such as adding pudding to green beans to improve acceptance
7. Avoidance of low-nutrient sweetened or adult beverages, such as carbonated beverages or tea
8. Use of vitamins or mineral supplements only if prescribed
9. A balanced diet with selections from each of the four basic food groups according to the child's age and nutrient needs
10. Avoidance of foods and beverages that promote caries, especially between-meal snacks and drinks in nursing bottles.

The nutritionist fully explains to the parents the rationale for these and other nutrition guidelines. Open group discussion allows parents an opportunity to explore the adequacy of cultural or familial dietary practices with the nutritionist. Information provided during the group sessions is reinforced informally on a one-to-one basis with the parents. Written nutrition information is also provided for reference at home.

Children on modified diets because of chronic illness, such as kidney disease or inborn errors of metabolism, are monitored to determine compliance with their dietary prescriptions. Children who are tube-fed are also monitored closely by the nutritionist to assure adequate nutrient intake and proper tube feeding technique. Oral stimulation and nurturing during tube feeding are encouraged to allow the tube-fed child to have sensory input similar to that provided to those children fed by mouth.

BEHAVIORS AT MEALTIME

Parents are again given anticipatory guidance to prepare successfully for their child's changing behaviors toward food and mealtimes. Potential behavioral problems at mealtimes are discussed with parents. We observe children and their parents during feeding sessions and provide guidance where indicated. For example, gagging on or spitting out nonpreferred foods is a behavior that can adversely affect diet. Counseling and modeling for parents help prevent these behaviors from becoming entrenched. Excessive praise and punishment of any kind are avoided.

DIET CONSISTENCY

Children are continually assessed for signs of developmental readiness for foods of more advanced consistency. The progression from liquids to strained to junior (or mashed) to minced foods is monitored to ensure that each child continues to receive an adequate and safe diet. For example, finger foods of high nutrient quality, such as cheese or enriched grain products, are suggested in place of poor quality snack foods. Hazardous foods such as nuts, extra crunchy peanut butter, popcorn, raw carrots, and hard candies are avoided because of the risk of aspiration. Avoiding table foods high in sodium, sucrose, and fat is also encouraged.

At the end of each semester, each child's physical growth, feeding skill development, and other pertinent nutrition information are summarized for the child's progress report.

DAILY ROUTINE

Daily routine helps staff and parents organize activities, anticipate future events, and use observations and information to the greatest advantage. Having the benefit of a regular routine allows developmentally delayed children to use resources and energy for learning instead of maintaining order. Our assumptions we make when working with parents and children are that

1. Routines are essential for all children
2. Quiet times are needed daily for both parents and children
3. Children should adjust to the family's schedule, not the family to the children's schedule
4. Children need to be included in family activities but do not need to be entertained at all times

Parents often express anxiety and frustration stemming from the demands of their numerous roles and the need to work with their children with developmental delays. Parents generally cope with their frustrations in one of two ways: They either neglect their other roles to help the child perform the prescribed activities or they do not work with the child on the prescribed activities. So, we spend time with parents discussing the importance of adopting a daily schedule (we also provide a sample routine).

Organized in large blocks, the routine should be a guide, not a mandate. Varying it occasionally is also a learning experience for the children. By the time the children reach school age, they should have a sense that each day may differ some from the next, but there is still order and a relationship between activities. After a change in the household routine (e.g., an illness), parents are encouraged to reestablish the routine quickly.

Quiet times increase security and cement the parent-child attachment. These times include reading or rocking before naptime or bedtime or first thing in the morning, depending on a child's personality.

Parents are encouraged to talk with their children about the time of day and the relationship between activities (for instance: "Good morning, Mary. It is time to get up." "Let's wash your face and your hands so we can eat lunch."). This talk helps children orient themselves to time and the relationship between activities.

SUGGESTED ROUTINE FOR INFANTS

Time of Day		Activities	Maximum Time (Minutes)
Early Morning (7:30 a.m. - 10:00 a.m.)	1.	Change diaper, do sit-ups and bicycle legs.	5
	2.	Ice before feeding, hold for feeding. Talk with infant and touch him as he feeds. May be a good time for siblings to eat and talk together.	20
	3.	Nap or free play in crib.	
	4.	Juice.	
	5.	Work on beach ball.	10
	6.	Work on focusing and following moving objects and hand-eye coordination.	5
	7.	Work on auditory stimulation (turn to sounds).	5
Late Morning to Midday (11:00 a.m. - 1:00 p.m.)	1.	Ice and feed again, as above.	20
	2.	Nap	
Mid-Afternoon (2:00 p.m. - 5:00 p.m.)	1.	Work on focusing, following, eye contact.	5
	2.	Work on other suggested activities.	10
	3.	Work on feeling different textures on different parts of the body.	5
	4.	Ice and feed, as above.	20
Dinner Hour	1.	Accompany family to table, sitting in an infant seat. If fussy, put baby in crib in quiet environment.	30
Evening (7:00 p.m. - 8:30 p.m.)	1.	Work on gross motor activities. Family members to help. Fast rolling, beach ball, sit-ups, etc., in front of mirror, if possible.	20
	2.	Quiet time or playing alone.	
	3.	Bath time, enjoying water, touch, talk, have fun, etc.	15
	4.	Ice and feed, as above. Rock and tell a short story about child's day, mother's day, family activities, or weather.	
	5.	Bedtime.	

PLAY AND TOYS

The work of children is play. Their eyes, ears, feet, and hands are the tools used to build skills necessary to learn to problem-solve, make decisions, and effect changes in their environment. Play is a necessary part of all children's development. They first play with their eyes, then their hands. As they mature, they are able to use their whole body for motor or physical play. As skills become more refined, so does play. Children are soon able to manipulate objects and create more constructive play. As cognitive skills develop, imitation emerges and they "rock" or "love the baby," which is more imaginative play. Finally, children learn to interact with others, and more social play appears. All types of play – motor, constructive, imaginative, and social – blend and interact, depending on their abilities and preferences.

DEVELOPMENT OF SCHEMES FOR RELATING TO OBJECTS

The manner in which children relate to objects gradually becomes more refined and sophisticated. Infants are first able to hold objects placed in their hands. Soon they begin to mouth the object – exploring it, tasting it, feeling it. Next, they bang or hit the object on the table or highchair. Around 6 months, children begin to shake and wave a toy. Throwing or dropping the object with no regard to where it lands occurs next.

In the next few months, children begin to rotate and examine toys. They may use the same sequence of actions on a variety of toys – mouth, pat, and shake. More complex actions follow: sliding objects on a surface, swinging objects in the air, and crumpling or tearing objects.

Around 10 months, children watch to see where a thrown object lands. Differential object use normally occurs between 10 and 12 months: Children know to squeak the squeeze toy, ring the bell, and hug a baby doll. During this period children begin to combine two or more objects in play (placing blocks in a container or a spoon in a cup).

Around 12 months children can use appropriate actions with objects on themselves or other persons (e.g., feeding mother with a spoon). Next, they begin to demonstrate appropriate actions with objects by using them on other objects, such as combing a doll's hair. Children begin to give objects to others in an effort to start social interaction, and they want to show toys to adults. Children next begin to spontaneously name objects, other people, or actions. By 18 months to 2 years, children substitute an available object for an unavailable object (e.g., pretending a spoon is a telephone). Throughout this development sequence, however, we must note that overlap of skills is frequent.

Children's pretend play skills typically emerge according to a specific hierarchy. Most children in our program use presymbolic schemes while a very few reach autosymbolic schemes.

Level 1: Presymbolic Schemes (11-13 months)

Children show knowledge of the appropriate use of objects by a brief gesture. Children are not yet pretending because they appear serious rather than playful; that is, their actions may not be accompanied by the smiling and laughing generally associated with pretend play.

Example: Children pick up a comb, touch it briefly to their hair, then drop the comb.

Level 2: Autosymbolic Schemes (13-16 months)

Children's play actions are directed toward their own bodies. Children now appear playful and seem aware of pretending.

Example: Children pretend to drink from a toy bottle; they may make slurping sounds.

Level 3: Simple Schemes (16-20 months)

Children's pretend play is now accomplished by (a) performing actions on dolls or persons and (b) pretending to do the activities of other people, animals, or objects.

Example: Children move a toy car while making car sounds.

For children exhibiting level 1 and 2 play skills, common objects such as combs, necklaces, glasses, hats, spoons, and balls are appropriate. These objects are embued with actions that children can typically perform on themselves and that lend themselves to playful turn-taking.

PLAY GUIDELINES

To help children get the most out of play, we suggest the following ideas to parents in our program:

1. Children must be given time on their own to explore their environment. Even young infants need time alone so they can learn to enjoy and amuse themselves. Many parents make the mistake of holding their infants whenever they are awake. We suggest allowing infants at least 20 undisturbed minutes in a safe environment surrounded by interesting toys. As children become more mobile, a playpen is appropriate to contain the adventuresome. Often what children discover on their own is more motivating and delightful than what we provide.
2. Help children learn to play. It is advantageous to demonstrate some activities to them to help them learn to use toys. By playing with the toy, adults can teach children to manipulate things and cause them to change. Play is an excellent time to work on language skills by showing children a toy and then describing it.
3. Toys need not be expensive to be learning experiences. Many fascinating toys exist in any household. Rattles can be made from small, tightly capped bottles filled with dried beans or popcorn. Many pieces of Tupperware can be stacked, filled, or nested for fun. Spoons and plastic cooking utensils can be noisemakers when used with pots and pans. Paper is a delightful toy, but its use must be carefully monitored. Books can be made from family photos or magazine pictures glued on construction paper or poster board. We encourage parents to string a mobile with such objects as rattles, foil, or pictures across an infant's bed. A mirror can provide hours of entertainment. Diapers or towels can be used for peek-a-boo, hiding toys, or dolls. Boxes have always held more allure than the gift within.

4. Toys should be age appropriate. Children with developmental delay should be given toys appropriate for their mental, not chronological, age. Just because toy packages often list an appropriate age for the toy, do not assume it is right for that age child. Instead, consider the skills necessary to play with the toy and determine whether your child has acquired those abilities. Do not frustrate children by demanding that they use a toy too sophisticated for them.
5. Always think of safety. Age-appropriate toys reduce opportunities for accidents. Consider sharp edges or pointed ends. Check toys frequently to see if they are broken. Parents should stay current on bulletins regarding child safety and recalled toys. (We instruct parents to avoid infant walkers. Not only do they put children in an improper weight-bearing position, they are potentially dangerous. Reports of accidents are frequent and there have been no studies to show that children placed in walkers benefit in any way. To the contrary, reports show an increase in accidents and a delay in walking.)

Suggested toys are categorized to help relate type of use with toys. Many categories overlap. These lists are not all-inclusive and, when given the lists, parents are asked to remember that their child is an individual with likes, dislikes, and varying abilities.

GROSS MOTOR TOYS

1. Inflatable rolls and beach balls: righting reactions, vestibular stimulation, equilibrium responses
2. Play gyms, mobiles: encourage kicking and reaching
3. Small trampoline: vestibular stimulation, balance reactions
4. Pull toys
5. Johnny jump-ups: vestibular stimulation, strengthen legs (might want to tie a string around the material between the leg holes to decrease the width, make sure feet are in a good position)
6. Balls: all sizes, to throw, kick, and chase
7. Scooter boards
8. Child-size rocking chairs
9. Fun tunnel
10. Rocking horse
11. Sit-N-Spin
12. Indoor gym: climbing, sliding
12. Carts, wagons, shopping baskets
14. Riding toys: look for ones with small base
15. Swing set
16. Swimming pool: fill with water or sand
17. Weights: use as directed by therapist, can be made by adding penny rolls to tube socks
18. Wind-up swing

FINE MOTOR, SENSORY, SOCIAL, AND LANGUAGE TOYS

1. Mobiles: sensory stimulation, track, reach
2. Roly-Poly toys: sensory stimulation, face identification, reach, cause-and-effect
3. Rattles: sensory stimulation, reach, grasp, hand-to-mouth, release
4. Squeeze toys: sensory stimulation, squeeze, transfer
5. Stacking toys: reach, grasp, manipulate, order
6. Shape sorters: reach, grasp, manipulate, match, object permanence
7. Play telephone, typewriter, pianos: individual finger use, cause-and-effect
8. Busy box: individual finger use, cause-and-effect
9. Puzzles: hand-eye coordination, object manipulation, pincer
10. Crayons: grasp, finger and wrist use, cause-and-effect
11. Hammer boards: grasp, eye-hand coordination, aggression
12. Mirror toys: self-help, self-image, social
13. Radio: sensory stimulation, supination/pronation, cause-and-effect
14. Musical instruments: sensory stimulation, aggression
15. Bubbles, balloons: reach, sensory stimulation, aggression
16. Dolls, puppets, stuffed animals: social, self-help, sensory stimulation
17. Floating bath toys: grasp, manipulate, pour
18. Blocks: grasp, transfer, stack
19. Books: turn pages, point
20. Play-Doh, clay: individual finger use, whole-hand use
21. Table and chairs

Through play, a child develops

1. Visual focusing, tracking, eye-hand coordination
2. Auditory discrimination: localize sounds, selective attention
3. Motor skills
4. Language skills: imitation, word usage, communication
5. Social skills: turn taking, role modeling, sharing
6. Problem-solving skills: means-end, cause-and-effect
7. Attention span
8. Object permanance
9. Imagination and symbolism

MUSIC

Music is an integral part of our program. Music time is scheduled during the last 15 minutes of the first hour. All the parents and children gather in one room and sit in a large circle on the mat, so that everyone can see each other. Children sit or stand, depending on physical ability and the activity, in front of their parents.

We usually use music with a lively beat or a march tune. Seasonal music is used during holidays, and "Happy Birthday" is also used.

Parents are encouraged to offer minimal assistance to help their children dance or sway, clap hands, sing, or hum with the music. Staff and visitors are also encouraged to join in the activity. We give every child two musical instruments (e.g., jingle bells and maracas for smaller children and bongos and tambourines for larger children).

Music time enhances skills in several developmental areas. Social interaction among children and between parent and child develops during music time. Children can watch each other dancing, clapping, smiling, and laughing. This activity offers parents an opportunity to develop eye contact with their children, employ techniques learned in the earlier part of the hour, and relax and enjoy their own child and the other families.

Listening, as well as hearing, is crucial to the development of language. By incorporating different types of music along with instruments, singing, and clapping, we provide an opportunity to listen to sound differences. Sound localization develops during music time as the children learn to seek out the sources of various sounds. Music time offers an opportunity for children to spontaneously imitate actions, such as, swaying, clapping, shaking the instruments, and imitating facial expressions. Imitating physical actions and movements provides a cognitive task that is also a prerequisite for learning to imitate movements involved in speech production.

Exercises used during music time encourage development of gross and fine motor skills. While swaying and dancing to the music, children are learning rhythm, balance, and coordination. Improved hand-grasp and eye-hand coordination can result from manipulating the instruments. Clapping hands and shaking the instruments help develop proprioception.

When children are in their own groups, we use music again. Songs with the names of the children, body parts, and articles of clothing improve self-concept.

Music time is considered a happy and fulfilling activity for everyone to enjoy. It provides many opportunities to develop skills as well as good social interaction. We encourage music time to be included in any program involving young children.

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3. FAMILY INVOLVEMENT

PARENT THERAPY GROUPS

REACTIONS

Stages of parental grief over the birth of a child with developmental delays have been clinically observed and reported by Weiss (1973), Parks (1977), Waisbren (1980), and others. Reactions of parents may differ in accordance with their life experience, educational and cultural background, religion, and social and ethnic values. Children with developmental delays belong to parents who may be emotionally mature, neurotic, or even psychotic; families from all walks of life can have a developmentally delayed child. Despite the variables, characteristic reactions can be identified.

Denial

In the early stage of grief, initial shock of the news that a child is developmentally delayed may be followed by the parents' denying either the child's problem or its permanence. Surprisingly, some parents may even seem cheerful, or at least not in pain, because the denial defense mechanism temporarily checks their anxiety. Denial lasting more than a year can indicate pervasive denial, suicidal throughts, or other serious emotional disturbances.

Awareness

During this stage of grief, parents become aware, either abruptly or in bits and pieces, of the reality of their child's condition. With awareness comes pain, grief, and mourning. Intense parental reactions to the birth of a child who is developmentally delayed may precipitate a state of crisis in the family, a disequilibrium of the homeostatic state (Parad 1972). Parents may appear confused, disorganized, and immobilized. A skilled professional must distinguish between a parent in a state of crisis and a parent exhibiting true psychopathology.

Prior to their child's birth, most parents indulge in fantasy, reflecting their wish for the "perfect" child. In addition, parents may unconsciously view their infants as an extension of themselves and may invest in their children their own dreams and expectations. Conversely, if a child is developmentally delayed and looks or acts "differently," mothers and fathers may feel inadequate because they gave birth to a "defective" child. An additional source of distress is the parents' embarrassment over their child's appearance or behavior and fear of other people's reactions. Consequently, parents may withdraw from social contacts. Some feel guilty about their real or imagined contribution to their child's condition and expend psychic energy on self-recrimination.

During this stage of grief, many parents become depressed and experience self-pity. The debilitating effect of depression is well known. Fatigue, sleep disturbances, periodic crying, feelings of hopelessness, and other symptoms can render parents ineffective in carrying out plans to meet the needs of a child with problems.

Anger is one aspect of depression. As parents struggle with their anger, they may intuitively understand that expressing this emotion rather than internalizing it will reduce their depression. Some may displace their anger on professionals who are working with them. Rejection of the child and even death wishes are not uncommon during this stage of grief. At the same time, parents may exhibit reaction formation: They may feel guilty about their negative feelings and may compensate by overdoing for their child.

Adjustment

During the last stage of grief, parents begin to adjust to the reality of having a child with developmental delay. They start to form an attachment to their child as they give up the "fantasy" child. Along with recognition of the reality of their child's condition, they may allow themselves to feel ambivalent, with love and affection coexisting with impatience over slow progress or other problems unrelated to developmental delay. When they have regained a state of relative equilibrium, they begin adjusting to their new role as parents of a child with handicaps, seeking remedial measures and using available services. During this stage, parents may be eager to help each other with adjusting to living with their child despite periodic psychological or environmental stresses.

The key to understanding the recurrent nature of grief was first identified by Olshansky (1962). He considers this reaction to be a natural rather than neurotic response to a tragic fact. It is almost universally experienced by parents of children with significant handicaps and sometimes by parents of children with mild retardation. Fear of their child's continuing dependency and periodic demands for specialized care contribute to the parents' recurrent grief.

The recurrence of the grief cycle for many parents during ten specific developmental crisis points was identified through research by Wikler (1981):

1. Diagnosis of developmental delay
2. Failure to walk by 12 - 15 months
3. Failure to talk by 24 - 30 months
4. A younger sibling's overtaking the child with a developmentally delayed functional level
5. Consideration of placement outside the home
6. Entry into a special program
7. Management of a crisis unique to a child with special health or behavior problems
8. Onset of puberty
9. 21st birthday, when independence from parents is usually acknowledged in a young adult
10. Consideration of guardianship and care for an adult with developmental delay after parents die

From clinical observations, the parents' ability to cope with their grief and to affect its intensity and duration is influenced by many factors: their superior coping skills and ego strengths, fortuitous family relationships, ready access to support systems and community resources, and other influences in their lives. Some parents, on the other hand, may have limited understanding of their child's condition because of insufficient knowledge of their child's intellectual, physical, or sociocultural deficiencies. Parents' energies may be depleted by significant health or emotional problems unrelated to their child's

developmental delay. Consequently, they may feel too tired to seek out or use effectively appropriate community services for their child. They may be adversely affected by dysfunctional family relationships and inadequate support systems. Professionals need to consider these possibilities when working with families.

In addition to grief, social isolation, and guilt over their negative feelings toward their child with developmental delay, several other factors can contribute to family tensions. When a mother has the main responsibility for child rearing, she may be physically exhausted by providing for the child's special needs and unable to attend to the household and the needs of her other family members. Her frustration with coping with these multiple tasks can result in her feeling tense and irritable. These problems are accentuated if the father is uninvolved with the family.

Research has shown that the interaction of parents with developmentally delayed children is different from that of parents of children with average intelligence. The former are more likely to give direction to their child. What in the past has been called "overprotectiveness" is now described as "over-directiveness" (Wikler 1981).

Another stress factor is the prolonged infancy of developmentally delayed children who require more intense and longer nurturing. At times, mothers may give up a career or an interesting job to spend more time with the child.

Unfortunately, there is still considerable misinformation and societal rejection of individuals who are developmentally delayed.

These stress factors are of concern to most parents of these children. In addition, some families may have socioemotional or environmental problems unrelated to, but accentuated by, the presence of a child with problems.

INTERVENTION METHODOLOGY

Because of its socializing aspects and its ready provision of mutual support, group therapy is the treatment of choice for most parents of children with developmental delay. Some of the "curative" factors of group therapy, described by Yalom (1975, 3-5), are especially useful in dealing with grief reactions, social isolation, difficulties with parent-child interaction, and changes in family roles because of the birth of a child with problems.

Most major therapeutic methodologies use a group as the vehicle for treatment. Group leaders initiate and facilitate the healing aspects of group process and may selectively interpret the meaning of interactions and attitudes to the group members. In the mediation model, used extensively in our program, the leader's major task is to move group members to provide mutual support, problem-solving, and timely confrontation. The leader also mediates any destructive conflicts (Schwartz and Zalla 1971, Schwartz 1977, and Shulman 1979).

Objectives of parent groups include

1. Reducing the intensity of grief reaction to the birth of a child with developmental delay
2. Reducing social isolation through socializing aspects of group process
3. Improving child rearing practices by exchanging information about development and behavior management of children who are functioning normally and those who have a developmental delay
4. Adjusting to role changes within the family unit resulting from the presence of a child who is developmentally delayed
5. Improving family relationships

It should be emphasized that objectives are mutually established by parents and professional group leaders. When group members are trying to define their position on controversial issues, hearing divergent views helps them clarify their own position.

How can a group leader facilitate the group process and ensure that it is a constructive, healing experience for the group members? What is the group leader's role? A leader actually has two sets of clients: each individual in the group and the group itself. Each client brings his or her own set of goals, norms, taboos, and social culture, and the group develops its own goals. However, it is important to remember that both individual and group goals must be addressed.

Our parent groups last an hour and are an integral part of the weekly EIP session. During each series of sessions, the same parents form a group of 6 to 12 members. While we have tried working with larger groups (12 - 20 members), they were not successful because only about half of the members participated in discussions and a common bond was only partially achieved. When groups had fewer than six members, there was insufficient diversity of views, and problem-solving was less productive.

Assignment to a group is made by the group leaders. The parents are required to attend the group sessions: The rationale for this approach is that, if given a choice about attending, most parents would not be aware of the therapeutic value of groups and would choose not to participate. Most parents volunteer that this form of therapy considerably contributed to improving their adjustment to their child's condition.

Three distinct phases of group process are identified: beginning phase, work phase, and termination phase.

Beginning Phase

Determining Mutual Goals. This task is accomplished jointly by the group's professional leader and the parents, who are encouraged to express their ideas about what they hope to accomplish. The leader affirms those goals that seem attainable and augments them with goals intrinsic to EIP (e.g., reducing parental grief, a realistic understanding of their child's condition, reducing family isolation, and integrating specialized child rearing practices into their life-style). Goal-setting is accomplished through interactive discussion and consensus rather than through imposition by either the leader or the group without input from the leader. This approach is congruent with the concept that the group is the vehicle of treatment, which includes input from the leader.

The leader decides whether goals are verbally summarized, written on a blackboard, or typed and distributed at the next meeting.

Establishing a Contract. Ground rules and norms are established by consensus and include such items as confidentiality, length and frequency of sessions, role definition, the means and purpose of recording, open communication and sharing of experiences and feelings, and agenda (setting procedures). While consensus is the optimal decision-making process, some rules and norms may be superimposed as operational requirements either by the group leader or group members.

Developing Empathy, Positive Relationships, and Trust among All Group Members. The leader must establish empathic, positive relationships and feelings of trust among participants. The leader helps the group members learn how to listen attentively, provide timely empathy and support, recognize the value of each individual's contributions, and exhibit a genuinely caring attitude. A positive relationship between group members does not mean an absence of conflict, nor does it mean a polite but guarded and meaningless exchange of platitudes. Having a child with developmental delay creates adjustment problems

for most parents. Many need help mobilizing their coping skills to allow themselves to deal with the resulting stresses. Timely confrontation by the group or by the leader may clarify for parents some self-defeating inconsistencies in their approach to their problems, such as wanting their child to learn self-help skills while persisting in doing these tasks for the child.

Group leaders must be aware of their own subjective feelings and reactions. Strong emotions, such as anger, on the part of a group member may arouse a reciprocal angry reaction on the part of the leader when the true source of the anger is not understood. So any intense, subjective feeling on the leader's part, whether anger, embarrassment, or intense joy, needs to be closely scrutinized: Is it preconscious reflection of a group member's feelings? It is a transference or a countertransference manifestation? Or is it an over-identification with some group members' norms or values?

Developing a Common Bond. The purpose of developing a common bond among group members is to reduce their feelings of loneliness and social isolation. It is a means to developing camaraderie, which decreases tensions. Leaders must be sensitive to special interests and concerns of each member. Their role is encouraging group members to talk about their common problems and interests, to share their painful or angry feelings, and to respond to others with self-revelations in an accepting, empathic way. The key is involving the group in identifying and discussing items of mutual interest.

Work Phase

Further development of a common bond continues during the work phase, with treatment focusing on group members coping with their problems. Consideration must be given to stages of grief and psychosocial needs of individual group members.

In this program several major themes have emerged during group sessions. The most frequent ones are

- Parental reactions to the manner in which they were informed about their child's condition, varying from anger about a professional's insensitivity to satisfaction with the professional's empathy and concern.
- Reactions and feelings of parents about their child's developmental delay.
- Realistic or exaggerated fears about the possible death of their child if there are major health problems; death wishes are sometimes present.
- Issues related to general child rearing or to special aspects of rearing a child with a problem.
- Fatigue on the part of the nurturing parents due to depression or unrealistic demands on their time and energy when caring for a child with specialized needs.
- Discomfort, embarrassment, or anger towards strangers, friends, and their extended family for staring or making untactful remarks about their child.
- Pain over social isolation after the birth of their child with developmental delay and seeking from the group ways to use their natural support systems.
- Concern over the normal siblings' adjustment to their brother or sister who is developmentally delayed.
- Sharing with other parents their pleasure over their child's modest progress.
- Development of camaraderie, trust, and a concerned, caring attitude among group members that includes hospital visits when their children are hospitalized.
- Seeking information about resources for their children.
- Concern about their child's future life adjustment: will they work, marry, and have children?

Reducing Grief through Mutual Support and Catharsis. During the work phase of group process, perhaps the most vital task facing the leader is reducing the intensity of grief of some group members. An early stage of grief may be a denial of a child's condition. With encouragement by the leader, some parents may reminisce about their earlier attempts to deny their child's handicap. Other parents may raise questions by citing similarities with their child. As parents recognize the reality of their child's condition, their grief becomes more intense. The leader's role is to elicit from the group emotional support for troubled members. The group then becomes the major means of treatment. Within an intimate atmosphere, troubled group members can speak freely about their anger and pain and gain considerable relief through catharsis. The common bond of similar experience within the group and emotional support usually results in the troubled parents' feeling they are not alone with their problems.

A similar process can occur if a group member is struggling with feelings that are socially taboo. For example, one group member told about a death wish toward her only son whose multiple health problems kept him in pain and left her preoccupied with his physical care during her time off from work. Her anxiety and guilt over her wish for his death were reduced through sensitive group acceptance of her dilemma followed by her relaxation and ability to engage in play with her son.

Feelings held in common by group members (such as "feeling like a freak" when in public with their child) are often only indirectly expressed. Group leaders can promote more direct expression of these feelings by soliciting comments and reactions or clarifying their underlying meaning.

Clarifying Reality. A leader can be instrumental in helping parents gain a clearer awareness and understanding of their child's condition and can help them implement some remedial measures. One way to help is to involve the group in responding constructively to group members' unrealistic perception of their children; another is for the group leader to provide further explanations. Parents rearing children with developmental delay have to take into account their slow learning rate. Many parents find this slowness frustrating because it is an ever-present reminder of the basic handicap. Information about specific aspects of rearing children who are developmentally delayed is helpful. This may be done through mutual problem-solving or by the leader's reinforcing and supplementing suggestions already given by other professionals in the EIP.

Ventilating Frustrations. Providing parents with an opportunity to talk about their frustration concerning their children and about themselves is essential. If resentments are left unspoken, their intensity tends to increase. Equally, if these feelings are discussed openly in a group, their intensity tends to decrease because of open expression of feelings and an empathic group response. Parents, then, are more open to suggestions about improving their child rearing. As parents gain more skills, they develop more self-confidence and better self-esteem.

Rehearsing for Action. Rehearsing for action (or practicing new ways to deal with a problem) is another means of assisting group members. How will parents handle telling normal siblings about their brother's or sister's developmental delay? Role play or a discussion by group members of alternative approaches may be useful. It is the leader's job to engage the group in some rehearsing for action.

Socializing through Group Process. Usually parent groups begin fortuitously. The group leader helps members get acquainted. Developing a common bond between group members produces a feeling of relief as parents realize they are not alone with their problems (Schulman 1979, 109-116). The group reduces social isolation for parents who used this mechanism to cope when they learned about their child's condition. The group is often a poignant

experience: In a group of parents of children with developmental delays, each child is accepted without parents facing long explanations. As the group leader comments on the children's modest progress, parents begin exchanging stories about what their children are doing without feeling embarrassed by comparisons. Group members can provide emotional support by sharing their painful experiences and feelings as well as providing empathic responses.

Resolving Conflict. Sometimes there are conflicts between group members, scapegoating of one member or ostracism of another. Resolving these problems and promoting constructive interaction among all group members is the leader's on-going task. Conflicts and disagreements may also arise between the group leader and a group member. Some conflicts are based in reality, others stem from transference or countertransference. Continuing awareness of their own subjective reactions and feelings is a necessity for group leaders. An open discussion of relationship problems is often useful and results in greater trust among group members. A leader's nondefensive attitude toward being criticized may serve as a role model for the group members' criticism of each other.

Termination Phase

Because parent therapy groups are a mutual aid system, their termination or even temporary suspension may produce a feeling of loss of a close relationship with other group members and with the leader. (The importance of group relationships is exemplified by a worried mother who several times attended a parent group even though her child was ill and was with a babysitter or at a hospital.)

According to Shulman (1979, 92-103), terminating or interrupting a productive group may elicit separation anxiety from group members as well as from the group leader. Denial of the importance of this relationship and the separation may occur initially. This may be followed by indirect or direct expressions of anger, manifested by the reemergence of conflict, hostile remarks, denial of the value of the experience, and other hostile feelings. At this point, direct expression of these negative feelings needs to be encouraged. When a group member is able to express feelings openly, the underlying sadness over loss usually emerges. The final stage is what Shulman terms the "farewell party": The meaning of the group experience is evaluated by members and leader, and plans are made for seeking other means of support.

The termination phase of group process should not be minimized. The process should start during one or two sessions prior to the last one. It can provide an opportunity for personal growth. The leader asks the members to identify what gains have been achieved and what further improvement is needed.

SIBLING THERAPY GROUPS

REACTONS

The role of siblings in the socialization of a child is often overlooked but is vital. Within the family, children have an opportunity to learn important lessons in peer relationships. The experience has much value for future and social-work relationships. During childhood, relationships between siblings can be stressful and ambivalent, characterized by quick shifts of feelings. Open expression of ambivalence is permitted in our culture possibly because children do not usually depend on their siblings (Einstein 1969) and have no fear that their behavior will jeopardize any vital need.

During stormy interactions, siblings are socialization agents for each other (Powell 1985, 13). They learn to control their temper, express anger in an acceptable way with each other, and obtain their share of their parents' affection and attention. They vie for positions of influence, at times forming alliances with other family members to promote their cause. These rivalries serve to teach siblings to share their parents' attention and to postpone gratification.

Brothers and sisters of similar age may learn another valuable social skill – being comfortable with a member of the opposite sex and learning to establish camaraderie and freedom in this relationship. This serves as a pattern later for developing congeniality and enjoyable aspects of heterosexual relationships. Among siblings of the same sex, there is considerable behavior and attitude modeling and some transmission of family values and norms.

What happens to this natural socialization process when there are handicapped children in the family? Siblings are often not permitted to retaliate against their brother or sister who is developmentally delayed, even if he or she attacks them; they are told to be patient and loving instead. This denies the siblings the right to protect themselves and to express their anger, which, if stored up, may be displaced more violently elsewhere or cause emotional problems. Children who are developmentally delayed are denied a valuable learning experience – namely, when they are aggressive, others will retaliate. When parents caution normal siblings to give in and wait their turn until the needs or bids for attention on the part of developmentally delayed children are taken care of, normal siblings may react with open or silent resentment or may accept this as their natural role but may exhibit tension or signs of stress (Farber 1959, Farber and Rychman 1968, Cleveland and Miller 1977). Sometimes, in an effort to explain the developmental condition to their other children, parents deluge them with intellectual explanations. Unfortunately, these efforts may result in diluting the playmate relationship between siblings and cast normal siblings into a pseudo-adult role.

Despite these problems, which can be minimized by adequate parental guidance, there are some compensations to siblings who have a brother or sister who is developmentally delayed. They have an opportunity to develop special qualities of compassion for persons with problems and to relate to them as lovable and loving family members without stereotyping or prejudging. They may learn patience in teaching someone less capable than they are, a quality that is often of value in social situations or in choosing a career. They may be given opportunities for early assumption of responsibilities that can enhance their maturation and ability to deal constructively with problems.

INTERVENTION METHODOLOGY

Our experience has been with siblings who are 7 to 16 years old. Sibling groups are limited to not more than eight participants. Attendance at group sessions is voluntary. Only if parents give permission are siblings contacted. Perhaps the biggest hurdle is to obtain parental concurrence. In our experience, most parents believe that either the sibling is only minimally affected by a developmentally delayed brother or sister or they have already explained the child's condition adequately.

A theme-centered approach to group work is used primarily when we work with latency age siblings. This model provides the establishment of some central themes around which group interaction revolves. The model has considerable structure and an educational component. The leader assumes major responsibility for helping the group identify their goals,

for maintaining focus, and for promoting constructive group interaction (Monfils 1985). At the same time, siblings have an opportunity to share their feelings and thoughts with others with similar experiences. The leader's guidance in structuring content is an important ingredient (Powell 1985, 94-97) for avoiding unproductive fragmentation, subgrouping, and lack of focus.

Objectives for the sibling group include the following:

1. Improve understanding of developmental delay
2. Reduce feelings of emotional isolation through the socializing aspects of group process
3. Improve communication between siblings and parents regarding the developmentally delayed brother or sister
4. Reduce tensions between siblings and parents
5. Learn how to explain the condition of the brother or sister to peers

BEGINNING PHASE

Unlike most parent and relative groups, the professional leader needs to provide considerable structure for the sibling group process by defining aspects of the group's purpose, establishing a contract with the members, and encouraging each member's input. Most children's life experience is that of living within an adult structure to which they react. Usually they flounder and become anxious if they receive insufficient guidance. Disruptive behaviors may then emerge in the group as a result of ambiguity. The group leader is responsible for defining what should and should not be done when ground rules are developed. The siblings' input is strongly solicited, with decisions made by consensus or by majority vote. It is the leader's responsibility to explain agency policies as they affect the group process (such as videotaping group sessions) and to summarize conclusions reached by the group.

Communication in a sibling group is primarily through games, crafts, and play, with discussion as a secondary means of exchanging ideas and expressing feelings. Activities such as the Brothers and Sisters Game (Sweedler and Kraushaar 1974), the use of Me-Books, and role play are useful in establishing free and open communication during group sessions.

A common bond is quickly established by encouraging sharing of information about problems and means of coping, with open talk about reactions to the brother or sister who is developmentally delayed.

WORK PHASE

The common bond is strengthened through empathic feedback on problems encountered by the group members. Feedback can come from either siblings or the group leader. Several major themes have been identified from notes on our work with sibling groups:

- Sharing information with the group about a brother or sister who is developmentally delayed (this is a major catalyst in the development of a common bond).
- Embarrassment in a public place over the appearance or behavior of a brother or a sister who is developmentally delayed; heightened during adolescence and beginning of dating.

- Anxiety over possible genetic aspects of a brother's or sister's condition, sometimes openly expressed: "Will I have a child like this?"
- What is developmental delay and mental retardation? (Many questions and discussions about this theme recur, even after ample explanations.)
- Initial ambivalence about participating in a sibling group.
- Resentment over excessive attention toward a brother or sister who is developmentally delayed, exhibited by the parents or by other relatives, with the siblings feeling that they need to fend too much on their own.

Providing specific information about developmental delay and mental retardation and dispelling myths and correcting misconceptions are important for siblings to acquire a more realistic understanding of a brother's or sister's condition. The views of the group are solicited and the appropriate ones reinforced by the leader. Quite often during such discussions, the role of the leader is primarily educational. Even when parents have correctly informed the siblings about these matters, they want to test validity within this peer group.

Encouraging an open discussion about a brother's or sister's condition and their personal feelings and reactions, whether negative or positive, further strengthens the common bond and substantially lessens siblings' feeling so different and isolated from their peers, an especially painful experience to teenagers for whom identification with their peers is so important. An additional benefit is the reduction of tendencies to deny their siblings' problems.

Strengthening their ability to cope with specific life-style dilemmas occurs by engaging siblings in problem-solving through role play, discussion of available options for action during games, or display of their work in Me-Books.

Siblings usually acquire a more realistic understanding of their brother's or sister's condition, their parents' reactions, and their own inappropriate behavior after the leader gently confronts them with the discrepancy between their actions and feelings or comments on some underlying, though disguised, negative feelings that cause problems for them or for others (Shulman 1979, 162). An example is the inconsistency of a sibling cheerfully agreeing to attend an open-house day at his brother's school, then picking a fight with his parents, thereby preventing their getting there on time.

Rehearsing for action through role play is useful in preparing siblings for discussion with their parents about sensitive issues involving a brother or sister who is developmentally delayed. Often, role play is directed toward letting parents know about angry feelings or criticism of parents for not taking time to listen to gripes or accomplishments. The same method is also useful in teaching the siblings how to handle prying questions and to provide an explanation about their brother's or sister's condition to their playmates or curious adults.

Because of their parents' preoccupation with the needs of their child who is developmentally delayed, siblings often have insufficient support systems within their own family. Hence, strengthening these natural sources of support is an essential goal in any sibling group. The leader must remain sensitive to the possibility of this problem and must identify verbally its existence for group members if they display feelings of alienation from their family. Group members work on remediating this problem through role play, often focusing on how to make known their discomfort without causing further alienation. Each role playing session is followed by a discussion of what has been learned. This method of problem-solving involves the children in physical activity and has some aspects of psychodrama, resulting in lessening of tension as well as being a rehearsal for action.

TERMINATION PHASE

The process of termination is similar to that for a parent group, with one important addition: A sibling group is an important support system to children whose natural support systems within the family are often weak. Therefore, improving communication with parents and other family members and learning to turn to them more for emotional support are emphasized: Sometimes this has been successfully achieved through a joint session with the siblings and their parents with the focus on sharing some specific issues or discussing means of improving their communication with each other.

GRANDPARENT AND EXTENDED FAMILY SUPPORT GROUPS

REACTIONS

The birth of a developmentally delayed child can have adverse effects on family functioning (Fowle 1968, Waisbren 1980). Parents may experience reactive depression and lowered self-esteem and may have difficulty accepting and relating to the child (Cummings 1976, Waisbren 1980). The number of support or problem-solving groups for immediate family members, particularly mothers, continues to grow and has proven to be an effective way to help family members work through some of the problems involved in having a child with developmental delay (Tavormina, Hampson, and Luscomb 1976). A few studies have alluded to the influence of the extended family in compounding or alleviating these problems (Pueschel and Murphy 1976, Waisbren 1980). In a related study of families with epileptic children, almost 80 percent of the families found a grandparent least helpful in the family's adjustment to the seizures. "Specific members of the family, particularly the child's grandparents, are significant and underestimated sources of adjustment difficulty for families" (Romeis 1980, 37).

In conducting support groups for the parents of children with developmental delay, the staff of the Early Intervention Program have been struck by the common difficulties group members have in dealing with their parents and other extended family members. Almost all say relatives do not understand the meaning of developmental delay or the necessity for the Early Intervention Program. Many say their relatives believe nothing is wrong with the child, who will "grow out of the condition." Quite often relatives present antagonistic, or at best nonsupportive, attitudes when parents attempt to solicit their help in carrying out the stimulation exercises assigned for homework each week. When asked to attend a therapy session with a child if the parents will be absent, relatives often exhibit an attitude of compliance and genuine helpfulness but later react with overwhelming confusion, shock, or fear when presented with the hands-on experience.

In spite of indications of need, there has been little structured attention given to helping extended family members either cope with their grief concerning the child with developmental delay or learn ways of being more supportive of the immediate family following the diagnosis of developmental delay. Grandparents and other relatives have what we call a double task: They must be concerned for both the child with developmental delay and their closer relative, the child's parent. Yet they often remain isolated from other relatives in a similar situation and in limited contact with professional help. As with parents, a support group for members of the extended family appears to be a useful method of helping these relatives work through their feelings of grief and develop a more supportive attitude toward the parents and child.

The methods of helping extended family members cope with the problems associated with having a relative with developmental delay and its significant effect on the functioning of the family are grounded in general systems, family therapy, and social network theory. Pattison et al. (1975) noted that the American family does indeed have a significant kinship system for providing affective and instrumental support. In the past two decades, the helping professional's concept of the family unit has broadened significantly. Coping is viewed as "a corporate enterprise" with solutions to problems being found within the collective resources of the individual's social network (Garrison 1981). However, these networks may not always be positive influences or contain the necessary coping skills. "They may be supportive, destructive, insignificant, or merely innocuous" (Hurd, Pattison, and Llamas 1981, 248). Boszor-menyi-Nagy and Spark, two family therapists, propose that "the idea of a totally independent nuclear family is a 'myth' " and there is a "deep existential impact of the three generations on each other" (1973, 216-217). Input from extended family members is a vital factor in a therapeutic approach from a family systems perspective, which views the child as an integral part of the family constellation. "One of the most effective automatic mechanisms for reducing the overall level of anxiety in a family is a relatively 'open' relationship system in the extended family. . . . Any successful effort that goes toward improving the frequency and quality of emotional contact with the extended family will predictably improve the family's level of adjustment and reduce symptoms in the nuclear family" (Bowen 1978, 537-538).

Therefore, by improving knowledge and understanding of developmental delay on the part of extended family members, the strength and variety of the family's coping mechanisms will increase. Additionally, more emotional and instrumental supports will be available for the immediate family. By participating in a support group in order to meet and talk with other relatives of children with developmental delay, group members can develop a greater understanding and acceptance of the child's condition. In addition, they become more informed about developmental delay and its implications. The attitude of the relatives toward the child generally influences the amount and type of support they can provide to the child's parents. Thus, participating relatives can become more supportive of the parents and feel less isolated in their own adjustment to the child's handicap.

The value of a relative group, therefore, is multidimensional. Relatives themselves benefit through the emotional support and factual knowledge they gain from the group. The parents of the child can benefit because of increased support and understanding from the relatives, thereby alleviating one source of stress in the immediate family. The child will benefit doubly because of increased acceptance by extended family members and because of increased acceptance by the parents as a result of reduced stress.

For these reasons, a pilot support group for relatives of children with developmental delay was established in March 1983. It has become an integral part of our holistic approach to working with handicapped children. The objectives of the group are to

1. Provide an educational basis and opportunity for problem-solving concerning developmental delay in general and Down syndrome in particular
2. Offer a supportive atmosphere to clarify and ventilate feelings and adjustment reactions of extended family members
3. Ameliorate the adjustment reaction of the family experiencing the birth of a child with developmental delay
4. Recognize and strengthen the overall family unit including the child, nuclear, and extended family and other intimate support networks
5. Promote social networking and interfamily links to others experiencing similar changes in their family

METHODOLOGY

A support group for extended family members, separate from an ongoing siblings group for school-age children and adolescents, is offered at no additional cost to families with a child enrolled in the Early Intervention Program. Voluntary participation is solicited through a letter about the Early Intervention Program; parents are then interviewed during the first session of the program and the names and addresses of relatives who might attend are obtained. On occasion, a child is enrolled in the Early Intervention Program without the grandparents' or other relatives' knowledge of the handicapping condition or need for intervention. Thus, for ethical and legal considerations, relatives are contacted only at the parents' request. Relatives are initially contacted by telephone, and they are given the specific information regarding time, place, and purpose).

This type of support group has two unique features. The first is the occasional inclusion of individuals who are not related by blood or marriage but who are intimate support persons to the nuclear family. Possibly because more families are becoming transient with changing employment situations, many of our participating parents now reside long distances from their families of origin and have developed close relationships in the context of an extended family. (One family experienced marital separation during the pregnancy and birth of their child with Down syndrome. The mother, who had no extended support system, subsequently developed a close relationship with a neighbor who attended the relative group and acted as the child's aunt.) The second unique feature of this group is that the structure is open-ended. Parents are encouraged throughout their participation in the Early Intervention Program to bring to the support group any relatives visiting from out of town. As a result, some support group members participate in only one or two sessions. Generally though, the core group resides in proximity and is very involved each week.

There are a number of reasons for structuring the relative group in this manner. Foremost is our holistic approach, which includes the extended family regardless of their locale. Many of our children begin in EIP at a young age (2-3 weeks), so relatives may still be visiting in the home while the mother recuperates. Few other communities provide support groups of this type; thus, an open-ended approach can provide an optimal tool for developing social networking and interfamily linkages across the country as relatives become acquainted and exchange telephone numbers and addresses.

Open-ended groups need tighter structure from the leaders. The leaders must be able to state the group purpose and goals clearly and briefly to new members so the group process can proceed quickly at each meeting. Leaders also devote more energy to cultivating mutual trust and a common bond when the group membership fluctuates because intimacy is usually more difficult to achieve in the short run. One advantage of an open-ended group is that members who have been in the group for a while can assist a one-time attendee with issues previously discussed. New members may also listen to the already established and lively group discussions. This may set the stage for feelings of acceptance and accelerate their own willingness to take risks.

Beginning Phase

Group sessions are held for approximately 1 hour per week for 8 weeks in the spring and fall and for 6 weeks during the summer term. Sessions are held in conjunction with the Early Intervention Program, so relatives can observe a child's program and participate if they so desire. The rationalization for this time structure is to provide accurate exposure to our program for the relatives and give opportunity for hands-on experience, possibly increasing involvement and confidence when interacting with the children.

The support group is led by social workers or graduate social work students supervised by staff social workers; the leaders function primarily as group facilitators and use many of the methods developed and refined by Shulman (1979). Techniques of the mediation model adapted by Albert Schwartz are also used. As with the parent groups, the leaders view the support group as a vehicle for treatment: The leader facilitates the healing process, mediates destructive conflicts, and promotes problem-solving.

In keeping with the traditional view of the stages of group development, certain patterns and themes are evident in each group session. Yet it is important to note that group work is not always orderly. Themes and problems may emerge only partially; later, when a strong bond of intimacy is established, issues reemerge in full force. The process of group therapy should be presented at a pace appropriate for the members.

Overlapping stages and group regression exist in part because of the attendance of a few out-of-town group members who are present for only one or two sessions. During the initial stage of group development, relatives quite often discuss their feelings in an intellectual or superficial way, keeping much emotional distance from other group members. Many members initially appear shy and embarrassed and are inhibited from interacting spontaneously with other group members. There is emphasis on seeking information, the group posing numerous questions to the group leader about areas of concern such as medical, genetic, and intellectual aspects of a child's condition.

The group leader must exhibit unconditional positive regard for the members as they achieve their stated goals. We emphasize the common bond among the members, because a desirable feature of group engagement occurs when discussion of someone else's problem has direct meaning for one's own problem-solving (Levine 1967). Open discussion of their related child's condition is encouraged, promoting feelings of realistic acceptance and identification. Because the extended family typically has limited understanding of the child's condition and its implications, specifics are discussed in the group, which provides the opportunity for correcting possible distortions in a supportive and empathic manner. Questions the group leader is unable to answer correctly are directed to the child's physician or Early Intervention Program coordinator, as well as to library reference material.

Each group is given the opportunity to formulate its goals and, on occasion, the group may request a guest speaker for one session. A staff psychologist may give a lecture and slide presentation regarding the etiology, and quite often implications, of mental retardation and developmental disabilities. There is an increased need for imparting accurate information to a group of this type. Many relatives are older and have been exposed to more outdated and stereotypical attitudes concerning the developmentally delayed than a younger population group. So the group leader makes a considerable effort to provide current knowledge concerning viable options and community services for developmentally delayed children.

Work Phase

The working stage of group development tends to be what we term "second-generation focused." Issues are emotionally charged, with relatives openly crying as the group climate becomes more intimate and supportive. Relatives voice concern regarding the effect children with developmental delay will have on the parents' psychological and family functioning. Discussion centers around parental reactions at the time of diagnosis and the feelings and reactions of grief the parents experience. (One grandparent tearfully expressed fear that her daughter was contemplating suicide; another verbalized the heightened marital discord

of her son and daughter-in-law after the birth of a grandchild with Down syndrome.) Family communication patterns and issues emerge as grandparents begin to share their difficulty or inability to discuss openly the child's condition with the parents. However, this issue remains "parent-focused"; relatives are reluctant to deal with their own emotional adjustments at this phase.

The group leader must concentrate on universalizing the implications of the grieving process for all families experiencing similar trauma. Attention is given to assessing individual coping skills while promoting a tolerance of behavioral differences. The group is led in problem-solving and role playing to discover possible ways of helping alleviate stress in nuclear families. Recognition and verbal reinforcement is given to the members for attending the group sessions to convey an attitude of helpfulness and support to the nuclear family. As we discuss the meaning of the double task relatives have as they grieve for the child as well as the parents, relatives often resist dealing with their personal grief regarding the child's condition. (One grandmother stated, "I only broke down once at the hospital; I have now accepted that the baby has Down syndrome.") The group leader must work to relate in an accepting manner to the group members' challenges and mediate between group members who project emotions or display anger toward another member. The leader must also stay a half-step ahead of the group members and present a gentle and consistent demand for work (Shulman 1979, 192).

As the work phase evolves, relatives themselves begin to deal openly with their feelings of shock, anger, and sadness. Grandparenting traditionally is considered a time of immense joy, pride, and satisfaction; Instead, these relatives are now in a situation that will require tremendous and ongoing emotional adjustments. Many describe the crushing disappointment when they realized the normal baby they anticipated was not born. (One grandfather stated, "I felt the world had come to an end.") Relatives may openly cry and receive emotional support and consolation from group members who have attended several previous sessions. The group itself deals in a positive way with a situational crisis, a relative in "emotional pain" who has only one session to ventilate and receive much needed support. This can be accomplished in only one session for families who are visiting from out of town.

Group climate is more intimate and revealing during this phase, and the role of the leader becomes one of promoting positive interaction and using the strengths of others. Another task is to assist group members in movement and in working through various grief reactions. Clarification and identification of feelings must be handled in a supportive and accepting manner.

As the relatives show evidence of adjusting to the child's diagnosis, there is evidence of chronic sorrow similar to that experienced by many parents of children with developmental delay (Olshansky 1962). However, the group begins to solve problems about life situations and look to the future. Discussion is often lively, animated, and centered about such topics as discipline, preschool and school placements, vocational opportunities, and sexuality. The group leader promotes realistic expectations on the part of the group members and gives encouragement for the future. Numerous relatives, grandparents in particular, appear less depressed and fearful when interacting with the child. There is increased evidence of tangible support offered to the nuclear family (e.g., babysitting on weekends). (One close friend of a family began to call herself the "adopted grandmother." She made plans to bring the child for the summer sessions of the program while the parents worked. It is noteworthy that this woman had no children of her own and the previous year was fearful even of holding the child. She has been a member of each support group held so far and frequently expresses how the exposure and group climate has enhanced her involvement with the child and his mother.)

Termination Phase

As with similar groups, termination is a time of ambivalent feelings for members and leaders. Feelings of attachment and bonding are noticeable; members often verbalize a dependency on the group for support and warmth. To end, or temporarily suspend, a therapy group usually produces a sense of loss, both for the group leader and the members. The process of discussing termination is started one or two sessions prior to ending the group and may initially cause members to deny the effect of the group. Anger may be expressed directly or indirectly; conflict and hostile remarks may reemerge. The task of the group leader centers on encouraging and facilitating open discussion of these negative feelings. Opportunity must be given for the group members to discuss the group's effectiveness in retrospect and make suggestions for future groups.

To treat group termination as a time of growth, the leader asks each member to identify personal gains made as a result of the group. Thoughts are also directed to areas that members want to improve. The group's reactions and suggestions for future groups are solicited. As the members critique the group process, the leader must reflect an objective and nondefensive attitude. Because intimacy is usually established, members can provide comfort and support for each other. Self-revelation by group leaders of their own reactions to termination can encourage members to be truthful with themselves and one another.

Group leaders suggest that the members form networks and maintain contact with both the agency and other members. We provide advocacy possibilities for the relatives, such as joining a community association, volunteering with agencies serving the developmentally delayed, or promoting the next support group for relatives. (One step-grandfather and grandmother developed plans to form and operate a private day-care center for developmentally delayed infants and children. "Grandma's House" would employ senior citizens part-time to provide care.)

INDIVIDUAL AND FAMILY COUNSELING

Because developmental delay does not respect persons or families, various types of individuals and families have participated in the Early Intervention Program. On occasion, a parent, family member, or couple is experiencing emotional or mental problems to the extent that they are disruptive or inappropriate in their support group. Their problems may be pathological to the extent that they can be best addressed only in individual or family counseling. When such is the case, this counseling is generally scheduled during the same hour as the groups are being conducted. The EIP coordinator and group leader discuss this alternative arrangement with the individual or family; the focus is always on what is best for the child and family. It is crucial that the consultant who provides this counseling participate in the weekly postconference. This assures that the EIP team is kept apprised of pertinent parental issues and it provides the consultant weekly with information about the child's progress.

CONCLUSION

Stages of grief and the recurrent nature of stress for parents of children who are developmentally delayed may affect parent-child bonding and the ability of parents to utilize specialized training offered in early intervention programs. A common theme in all parent groups is their problems dealing with adverse reactions of their extended families to the

developmental delay of their children. Only recently have professionals recognized that grandparents and other extended family members experience similar stages of grief. In addition, they have the double task of being concerned about their closer relative, a child's parent. Group work is one means of reducing stress. Socializing aspects of the group and the development of a common bond decrease social isolation experienced by many parents and grandparents. A productive group constitutes a mutual aid system. Mediation model is the one predominantly used in our EIP program for parent groups as well as for grandparent and extended family groups. In this model, group leaders function as facilitators, promoting therapeutic group process by encouraging participation and open discussion of ideas and feelings, identifying commonalities, and mediating conflict. At times the leader's role may be educational, with experiential, didactic, or problem-solving features. During each series of sessions, the membership of the parent groups remains the same, while the membership of the grandparent or extended family groups is open-ended. Each group member's stage of grief needs to be considered when the results of group therapy are assessed.

There are wide variations in the stages of grief and reactions of siblings of children who are developmentally delayed. In addition to age, most siblings are influenced by their parents' preoccupation with the needs of their brother or sister who is developmentally delayed, and they may feel they do not receive enough attention. Role changes within the family unit and the attitudes of their peer group are other significant factors. With sibling groups, we use a theme-oriented approach to group work. Leaders provide structure for the selection of content and activities but encourage group members to be open about expressing their feelings and reactions toward their developmentally delayed brother or sister. Games, role play, and other activities are ways to engage the group in the healing aspects of group process.

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4. CASE STUDIES

The cases presented here allow the reader to follow three children throughout their enrollment in the Early Intervention Program. Although the cases are real ones, minor changes, including names of the children, have been made for the purpose of confidentiality. We hope the reader will find this section helpful in pulling together all aspects of our program.

CASE STUDY ONE

Sandy was referred for evaluation by the UTCHS Genetics Department. At 9 months, she was evaluated by the interdisciplinary team. Results of the evaluation were

Primary diagnosis: Carpenter syndrome (acrocephalopolysyndactyly, Type II)

Intellectual level: low-average, tentative

Adaptive level: borderline

Physical medical findings:

1. Stigmata of Carpenter syndrome, including an abdominal hernia
2. Heart murmur, possibly functional; rule out congenital heart defect
3. Release of coronal, lambdoidal, and sagittal sutures at 1 and 4 months of age
4. History of "near arrest" during first surgical intervention, followed by tonic seizure; EEG was normal at 35 days; seizures have not recurred
5. Wore long leg casts from age 7 weeks to 4 months for correction of bilateral club foot deformity
6. Retrognathic mandible
7. Possible lingual frenum involvement
8. Cannot rule out mild hearing loss; abnormal tympanograms, both ears
9. Deficient iron intake (87% of RDA for age)

ASSESSMENT OF FUNCTIONAL ABILITIES

Motor Development: Gross motor skills fell within a range of 5 to 6 months (sat when placed for 30 seconds, up on extended arms, rolling both directions). Fine motor skills clustered at the 5-month level, also. Her skills included hands to mouth, reaching with both hands, and shaking a rattle actively. Some difficulty of fine motor manipulation resulted from her limited finger use and numerous surgeries.

Language: Expressive skills at the 3- to 4-month level while receptive skills at the 6-month level. No babbling was noted. She responded inconsistently to her name but responded to voices in general.

Social and Behavioral: Sandy did not laugh or smile often. She did not mind being separated from her mother. Social skills were low, approximating a 3-month level.

Feeding Skills: Sandy placed her hands on her bottle; however, she was unable to hold it unassisted. She was finger-feeding crackers, though infrequently. She began accepting solids from a spoon at 8 months and a greater variety was gradually being introduced. She had not attempted cup drinking.

Self-Help Skills: As previously mentioned, Sandy had only recently begun finger-feeding and accepting solid foods. She did sit in a highchair. She was raising her arms to assist in removing her shirt but could not remove socks or shoes.

ASSESSMENT OF FAMILY SITUATION

Sandy lived with both parents and one sibling. Mr. Davis was temporarily transferred out of state and was able to visit only intermittently. Future plans were uncertain regarding the family's move. Family roles were traditional with Mrs. Davis assuming responsibility for child rearing and Mr. Davis for economic support. The family was heavily pressured financially because of Sandy's medical expenses. Mrs. Davis found it difficult to express any negative feelings and was struggling to be a "super" mom. Some support was provided by Sandy's maternal grandmother, Mrs. Douglas, who lived in the same town.

INTERVENTION

Upon recommendation of the interdisciplinary team, Sandy was enrolled in EIP. Goals were established. Her progress remained varied because of her hospitalizations for sickness and corrective hand surgery. Close attention was given to her weight gain and hearing status through assessment and monitoring. After completing the initial session, Sandy enrolled in the summer program. She was unable to participate in the therapeutic water play because of more hand surgery and repair of a hernia. Emphasis was placed on using her hands as tools to keep her active with them. Mrs. Douglas, the maternal grandmother, was able to attend five meetings of the grandparent/extended family member support group. At first, Mrs. Douglas hesitated to talk about Sandy or her handicaps. However, at the second meeting, a new grandmother attended. Mrs. Douglas formed a quick alliance with this woman and began to be more open. By the fourth session, Mrs. Douglas was able to cry openly and vent anger over Sandy's condition. She expressed deep concern for her daughter's ability to cope with this additional stress. Support and empathic feedback was given by the group. The group gave additional suggestions to Mrs. Douglas regarding her support of the nuclear family. One grandmother ended the last session by stating to Mrs. Douglas that "she had really made the group." Sandy was dismissed from the program at the end of the summer because the family relocated out of state. At the time of discharge, Sandy was 16 months old. Assistance to the parents to find a program suitable for Sandy was given.

Name: Davis, Sandy
Birthday: 4/7/82
Dates: 7/7 – 8/11, 1983

EARLY INTERVENTION PROGRAM **PROGRESS REPORT**

ATTENDANCE

Mrs. Davis and Sandy attended all sessions of the summer EIP.

PARTICIPATION IN WATER ACTIVITIES

Sandy was unable to participate in water activities this summer because of surgical wounds on her hands and abdomen.

DEVELOPMENTAL PROGRESS

Gross Motor: Sandy is coming to stand without assistance but taking no independent steps. She creeps up and down stairs. She has made limited attempts to walk with or without hands being held, choosing to crawl rapidly on hands and knees.

Fine Motor: Sandy requires much encouragement before she will use her hands. She avoids any activity that involves the space between the fingers. She has a crude pincer grasp and is beginning to point. She holds crayons in the palm of her hand and makes definite strokes.

Language (Expressive): Sandy's vocalization increased during play; limited vocalization to herself in front of mirror. She has no recognizable words besides "ma-ma."

Receptive: Sandy demonstrates appropriate behavior to familiar words, e.g., "eat," "drink," "go." She responds to "no" commands inconsistently. She will attend when her name is called and enjoys activity, songs, and picture books. She demonstrates understanding of the personal pronoun "me" and "her" 50% of the time.

Self-Help (Feeding): Sandy's finger-feeding is limited but spoon-feeding improved. She requires assistance in "dipping" but can bring food to mouth without difficulty. Using two hands, she drinks well from a cup. Sandy is now weaned from the bottle.

SOCIAL

Initially (first three sessions) Sandy had difficulty separating from her mother and cried and sat near the door from 10:00 to 11:00 a.m. She enjoyed watching other children play but stayed near an adult most of the session.

HEALTH DATA

Sandy seemed healthy throughout this session. She had surgery 2 weeks prior to the summer EIP, but the only restriction was water activities.

NUTRITION DATA

At 16 months, Sandy was 80.3 cm. and weighed 12.03 kg. Based on a length-age of 17½ months and ideal weight of 10.75 kg., her weight is 112% of the expected weight for length. Weight gain has been rapid this summer.

PARENT-CHILD INTERACTION

Mrs. Davis and Sandy interact frequently and demonstrate much warmth. Mrs. Davis needs encouragement in disciplining and setting limits for Sandy.

PARENT GROUP

Mrs. Davis was very comfortable in the group and talked freely. Much of her discussion was problem-related – her child's surgery, the forthcoming move to Kentucky, plans for her child's future. She gave support and encouragement to other group members. She was a good group participant and probably benefited from this experience.

OTHER

The Davis family is moving to Kentucky at the end of August.

PLANS

1. Send activity suggestions to Mrs. Davis, emphasizing language, gross motor, and discipline.
2. Provide address and phone numbers of appropriate programs for Sandy.

Name: Sandy Davis
Birthday: 4/7/82
Projected Date: 5/12/83

INDIVIDUAL CARE PLAN

Behavioral Objectives

	Sandy will
Feeding	
Skill Development	1. Assist with spoon-feeding with hand-on-wrist guidance. Scooping and returning spoon to the plate will require hand-on-hand assistance. 2. Drink from a cup at every meal with assistance. 3. Wean from the bottle to a cup. 4. Finger-feed table foods at each meal unassisted.
Oral Development	1. Cooperate with one oral facilitation technique daily. 2. Move food from one side of her mouth to the other using her tongue. 3. Munch soft chopped table foods at each meal.
Self-Help Skills	1. Sit in a highchair for three meals a day. 2. Reach out with her hands to be picked up 100% of the time. 3. Put her arms out for sleeves and her legs for pants and socks.
Gross Motor Skills	1. Sit unsupported for 10 minutes. 2. Roll from stomach to back and back to stomach three of four times. 3. Get on hands and knees for 30 seconds. 4. Bear weight in standing position with support two of four times.
Fine Motor Skills	1. Bang two cubes together upon presentation. 2. Transfer a toy from one hand to the other two of four times. 3. Release two cubes in a cup two of four times.

Language		
Expressive	1.	Continue babbling and add one meaningful word (mama, dada, bye, hi, etc.).
	2.	Imitate facial expressions made by mother two of three times.
Receptive	1.	Wave bye-bye with guidance 75% of the time when someone leaves room or she leaves.
	2.	Respond to her image by patting mirror.
Nutrition	1.	Slow her rate of weight gain to achieve a more optimal weight for her length.
	2.	Accept a balanced diet from the four basic food groups.
Social	1.	Laugh out loud when stimulated at all times.
	2.	Play peek-a-boo and pat-a-cake.
Behavioral	1.	Play unattended for 30 minutes.

Family will

1. Provide a diet that is appropriate for her developmental level.
2. In the parent group, by caring and accepting responses, assist others as they sort through their feelings and deal with their problems.
3. Share their concerns and feelings of well-being with other group members.
4. Be on time; call if unable to attend.
5. Work with Sandy to achieve these goals.

_____	_____	_____	_____
Physical Therapist	Nutritionist	Nurse	Social Worker

_____
Speech Pathologist

CASE STUDY TWO

The UTCHS Genetics Department referred David at birth because of his diagnosis of Down syndrome. He was evaluated by the team at 1 month of age; no intellectual or adaptive levels could be measured. Pertinent physical medical findings include

1. Stigmata of Down syndrome
2. Microcephaly
3. Generalized hypotonia, mild to moderate
4. Congenital heart defect, ventricular septal defect (inferred from parents' report), well-compensated
5. Short stature
6. Anemia, type unspecified, probably microcytic and hypochromic (HCT 38% on day of evaluation); receives multivitamins (Vi-Daylin) with iron, by parents' report
7. Chronic constipation treated by addition of corn syrup to formula
8. Excessive calorie intake suspected from addition of corn syrup: 3-day food record requested
9. Inadequate dietary source of fluoride

ASSESSMENT OF FUNCTIONAL LEVEL

Consideration of David's prematurity of 1 month was taken into account prior to his assessment. David was able to focus momentarily on objects. He was able to lift his head in a prone position and rotate it to clear his nose. Primitive reflexes were appropriate. No feeding problems were noted.

ASSESSMENT OF FAMILY SITUATION

Mrs. Grinder was very tired because of recovering from a caesarean section with complications and because of caring for two young children. Mrs. Grinder was overwrought with fears for her child; she was certain her husband's expectations were too high. Mr. Grinder stated he felt that David would be normal if treated normally. Each felt the marriage was stable and good. Family support, however, was limited because the Grinders did not feel they could talk about the situation. The maternal grandparents denied the possibility of David's having Down syndrome. The paternal grandmother was very discouraging about David's future because she had a sister with Down syndrome. Mrs. Grinder was being forced by her husband and family not to grieve. Traditional roles were held by the family with Mr. Grinder being the breadwinner and Mrs. Grinder being the homemaker.

IINTERVENTION

Upon recommendation of the interdisciplinary team, David and his family were enrolled in the Early Intervention Program. Both parents attended the sesssions. Mr. Grinder attended weekly even after working the night shift. He did not actively enter into the developmental activities on the mat but continually watched each activity. David's progress followed a fairly typical pattern; however, his gross motor and expressive language skills were below

his fine motor, feeding, social, and self-help skills. Chronic constipation continued even with the addition of table foods at the appropriate age. With improvement in overall muscle tone, no change was noted in David's bowel movements. David suffered several bouts of pneumonia and on one of his hospitalizations, a GI workup was recommended. No significant findings resulted, and the constipation resolved itself between 15 and 18 months.

Mr. and Mrs. Grinder became active group members. Mr. Grinder continually spoke about the woman's role in the home. Throughout several sessions, Mrs. Grinder became more vocal, venturing to disagree with her husband. With the support of the group and her family, Mrs. Grinder returned to work and found a great sense of fulfillment. Although not fully supportive of his wife's decision, Mr. Grinder allowed her to go to work and was even willing to take responsibility for David when she was working. At the group's suggestion, Mr. and Mrs. Grinder began spending more time away from the children to give the couple some quality time together.

David's sister, Julie, attended two separate sibling groups, each one running for four 1-hour sessions. She was initially shy and reluctant to discuss her feelings. However, as the group progressed, she developed an intimacy with other group members. She began to ask many questions about Down syndrome and was able to vent the anger she was feeling toward her parents because of feeling neglected. With role playing and problem-solving in the group, Julie was able to discuss this with her parents. She was even able to stand up to a group of her peers who were ridiculing a handicapped teenager and as a result was able to educate the other children about handicapping conditions.

David will remain in the Early Intervention Program until his skill levels allow him to graduate to a preschool program.

Patient: Grinder, David
Birthday: 12/25/82
Date: 5/12/83

EARLY INTERVENTION PROGRAM **PROGRESS REPORT**

PARENT-CHILD RELATIONSHIP

Mr. and Mrs. Grinder interact well with David. Both parents talk frequently to him, and he responds by smiling and cooing. David is rewarding to both parents because of his smiling and laughing behaviors. Both parents are concerned about David's progress and seem genuinely pleased with his achievements.

LANGUAGE AND COGNITIVE SKILLS

David is making numerous sounds including cooing and vowel sounds. He smiles at his image in the mirror and is beginning to reach out. He tracks objects visually very well and is extremely attentive to his environment.

SOCIAL AND SELF-HELP SKILLS

David smiles responsively and spontaneously. He is beginning to laugh aloud. David can maintain excellent eye contact with his parents as well as with others. David is placing his hands on his bottle as well as on his cup. He removes food from a spoon using his lips and allows icing prior to mealtimes.

MOTOR SKILLS

Gross: David is able to lift his head to 90° in a prone position and is beginning to get on extended arms in prone. He is able to roll from prone to supine but not back. He continues to have a minimal head lag when pulled to sitting. He is beginning to sit erect when held in a parent's lap.

Fine: David is holding a rattle for at least 30 seconds in each hand and is beginning to shake the rattle. He does not have good volitional control and often hits himself in the face with the rattle. He is beginning to take objects to his mouth and uses a full-hand grasp for picking up objects.

BEHAVIOR

No behavioral problems are noted at this time. David is usually very pleasant and does not fret unless he is hungry or not feeling well.

PARENTS' GROUP

Mrs. Grinder began as a silent, sometimes tearful member and progressed to an openly assertive task leader after the reformation stage in the group. She demonstrated her assertiveness by separating from the enmeshed grief position in association with her husband and becoming independent in her growth, disagreeing with his views, and becoming more self-supporting.

Mr. Grinder began as a resistant, silent, uncooperative member, attending as if by coercion. He was actively willing to argue with other group members and occasionally acted as a task leader, especially concerning religiosity as a form of denial (a stage of grief). By the end of the second EIP period, Mr. Grinder had formed a bond with several other parents, acted occasionally as a socioemotional leader, and was more tolerant of the group and his wife and more accepting of the realities of his child's disability. Mr. Grinder's growth in group became an important benchmark to other parents who in turn encouraged the discussion of important issues to these parents during subsequent group sessions.

HEALTH AND NUTRITIONAL STATUS

David has had a fairly rapid increase in weight followed by a longer, more rapid spurt in linear growth between birth, and 3 months. His weight dropped from 104% of the standard for his length at 1 month to 79% of standard at 3¼ months. Based on a length of 55.7 cm. and a weight of 4.24 kg., his length-age was 2¼ months and his standard weight was 5.4 kg.

When feeding skills were assessed at 3½ months, David was on a 4- to 5-month level. He was beginning to mouth objects and make munching motions, both 6-month skills. Strained foods have been introduced early upon advice from the pediatrician.

After an episode of labored breathing with sternal retractions, he was taken to a pediatric cardiologist on May 5, 1983, and he is to return in July.

PLAN

1. Continue in EIP, summer 1983.

_____ Physical Therapist

_____ Nurse

_____ Nutritionist

_____ Social Worker

_____ Speech Pathologist

INDIVIDUAL CARE PLAN

Behavioral Objectives

Name: Grinder, David
Birthday: 12/15/82
Date: 3/3/83
Projected Date: 5/12/83

AREA	
Feeding	David will
Skill Development	1. Place his hands on his bottle for 50% of the meal. 2. Close his lips over a flat spoon to get a pureed food four of five times.
Oral Development	1. Cooperate with oral facilitation techniques daily. 2. Munch on a solid food placed over his molar area two of three times.
Self-Help Skills	1. Take a finger food to his mouth two of three times attempted. 2. Sit in a highchair for all of his meals.
Nutrition	1. Bring his weight within 90-95% of the average weight for his length. 2. Accept a balanced diet of formula, baby cereal, and strained foods according to his pediatrician's advice.
Social	1. Track a moving object 180° and overhead three of four times attempted. 2. Maintain eye contact with the mother for 30 seconds. 3. Smile spontaneously when spoken to by the mother four of five times.
Behavioral	1. Laugh aloud when stimulated two of three times.
Gross Motor	1. Lift his head to 45° when placed in prone four of five times. 2. Roll from stomach to back two of three times attempted. 3. Support himself on his forearms for 1 minute. 4. Hold his head in line with his trunk when pulled to sitting two of three times.

Fine Motor

1. Hold a rattle in his hand for 30 seconds four of five times attempted.
2. Shake a rattle one of three times attempted.
3. Take a toy to his mouth two of three times attempted.

Speech

Expressive

1. Coo and chuckle when placed at the level of his mother's face two of three times.

Receptive

1. Turn to his name two of four times attempted.
2. Locate a sound source in the room three of five times.

Family will

1. Be on time, call if unable to attend.
2. Work with David to achieve these goals.
3. By their caring and accepting responses, assist others as they sort through their feelings and deal with their problems.
4. Share their feelings of concern and well-being with other group members.

Physical Therapist	Nurse	Nutritionist	Social Worker	Speech Pathologist

CASE STUDY THREE

Tina was referred to the Child Development Center by her pediatrician who was concerned about her "inadequate speech." She was 26 months when evaluated. Results of the evaluation yielded the following:

Primary diagnosis: acquired encephalopathy with bilateral subdural hematomas and concussion following an automobile accident at 2 months

Intellectual level: mild mental retardation, tentative

Adaptive level: borderline

Physical medical findings:

1. Generalized seizures, tonic (controlled)
2. Abnormal EEG, by history
3. Deficient iron intake, marginal calcium intake
4. Marginal niacin intake, deficient vitamin D intake
5. Hemoglobin 11.6 g/dl; low MCHC

ASSESSMENT OF FUNCTIONAL LEVEL

Motor Development: Tina ambulated independently. She was able to run and play actively. She threw a ball while standing but could not walk backwards. She was unable to kick a ball or jump. Tina scribbled spontaneously and built a tower of two cubes. A neat pincer grasp was present. Skills clustered between the 18- and 20-month level.

Language: Receptive and expressive language abilities were assessed at the 12-month level. On the day of evaluation, Tina was congested, breathed through her mouth, and drooled profusely.

Social and Behavioral: Tina was friendly and cooperative. She separated easily from her mother. No delays were noted on the DDST in the area of personal-social. According to her mother, Tina threw temper tantrums, which the mother tried to handle ineffectively with spanking.

Feeding Skill: Tina was able to feed herself with a spoon and drink from a cup unassisted. She ate all types of chopped table foods.

Self-Help Skills: Tina enjoyed imitating housework. She helped put her toys away. She was unable to assist with removing her clothes. Mrs. Hall had begun toilet training.

ASSESSMENT OF FAMILY SITUATION

Tina was an only child living with both parents. Her father was unemployed and reported by the mother to be a heavy drinker. Marital discord was present. Mr. Hall would not take an active part in child rearing and was only mildly interested in Tina's welfare. Paternal relatives provided minimal family support. Mrs. Hall was most concerned over Tina's resistant behavior.

INTERVENTION

Mrs. Hall and Tina were enrolled. Goals were established for Tina and the family. Emphasis was placed on controlling Tina's behavior because of the strain it was causing to the parent-child relationship. A behavior management program was established, and Tina responded well to the principles of positive reinforcement and time outs. With a decrease in Tina's undesirable behaviors, a healthier relationship emerged. Emphasis was also directed to expressive language development through developmental play and activities to increase attention span. Persistent work on oral motor control saw progress in tongue and lip control and a decrease in drooling.

Mrs. Hall was a quiet group member in the parent group. She was, however, with support from the group, able to discuss her embarrassment because of Tina's behavior and the pain she experienced over the accident.

Tina and Mrs. Hall continued in the program for one more session. More progress was noted in parent and child. Tina was then dismissed to a preschool program for children with handicaps.

Patient: Hall, Tina
Birthday: 5/25/78
Date: 6/4/81

EARLY INTERVENTION PROGRAM **PROGRESS REPORT**

MOTHER-CHILD RELATIONSHIP

Tina and Mrs. Hall attended all sessions this spring. They enjoy a mutually satisfying relationship. Mrs. Hall continues to be overindulgent and inconsistent much of the time; however, when pushed, she can manage Tina. When Mrs. Hall leaves, Tina clings and cries, but she is consolable and easily enters into play.

SOCIAL AND SELF-HELP SKILLS

Tina smiles and laughs infrequently. She looks at the other children but does not interact to any extent. She participates with guidance in group activities such as following directions in singing. She is completely toilet-trained and feeds herself using a spoon. She is independent in cup drinking. She can remove several articles of clothing but requires help in putting on clothes. At 35 months a feeding assessment placed her skills at the 30-month level. She self-feeds with a spoon, is beginning to spear with a fork, can pour from a pitcher with some spillage, and uses one hand for cup drinking. Mrs. Hall does not consistently allow Tina to use the feeding skills she has acquired.

LANGUAGE AND COGNITIVE SKILLS

Tina knows 20 to 30 words; some have dropped out and others added. She has on a few occasions put two to three words together. She says "bye-bye" appropriately about 50% of the time. She knows five to six body parts. She responds to her name. Mrs. Hall tries to help Tina, who has made progress, but Mrs. Hall is a poor language model, being unable to model and expand appropriately.

GROSS MOTOR SKILLS

Tina walks and runs well. She walks up and down steps with one hand held. She is beginning to jump up and down. She walks on the balance board with minimal help. She crawls cross-diagonally and can throw a ball a short distance.

FINE MOTOR SKILLS

She scribbles using her right hand. She stacks three to four blocks. She has a good pincer bilaterally and can turn pages in a book one at a time. She enjoys working puzzles and can put pieces in the right place 25% of the time.

BEHAVIOR

Tina has stopped drooling altogether. She has very few tantrums during the sessions, but tantrums continue three to five times weekly at home. Tina is explorative, generally able to conform, and her play is parallel. She is not aggressive. General responses and behaviors are at the 18-month to 2-year level. Attention span is 3 to 5 minutes or longer in given activities.

PARENT GROUP

Mrs. Hall attended 13 of the 14 group sessions. Her husband attended one session with her. Mrs. Hall was usually attentive but mostly nonverbal, except in brief responses to direct questioning. Repeated attempts by other group members and leaders failed to elicit much verbal response. In contrast, her husband was quite verbal during his one visit and made repeated attempts to be a part of the group. He stated that it was hard to see other children doing things that his child could not. He was complimentary of Mrs. Hall's patience with Tina. He also related that they were in a bad wreck when Tina was 2 months old and they would never know whether that or something else was the basis for Tina's problem.

HEALTH AND NUTRITIONAL STATUS

She has had no seizures but continues on medication. Tina was seen by Dr. Smith in May 1981. Immunizations are up to date. In February, at 33 months, Tina was 5% underweight based on a length of 91.0 cm. (length-age 29½ months) and weight of 12.26 kg. Food acceptance has improved since the fall session.

_____
Nurse

_____
Nutritionist

_____
Social Worker

_____
Physical Therapist

_____
Speech Pathologist

INDIVIDUAL CARE PLAN

Name: Hall, Tina
Birthday: 5/28/78
Date: Fall, 1980

AREA	Behavioral Objectives Tina will	Goals to be accomplished by Dec. 1980
Self-Help	1. Be completely toilet-trained. 2. Feed herself using a spoon without help 3. Drink from a cup or glass and replace it when finished (put glass down easily on a table). 4. Remove her coat, socks, and unfasten shoes at the appropriate time 100% of the time. 5. Put her socks and shoes on with hand-on-hand guidance 50% of the time.	
Behavior	1. Stop all resistance, tantrums, and screaming when requests are made of her. 2. Attend to selected tasks 5 to 15 minutes at the table. 3. Sit still to be read to 2 to 3 minutes and pat a picture in a book three of five attempts.	
Speech/Language	1. Recognize and name five objects selected by her mother five of five attempts. 2. Call her mother "mama" two of five trials. 3. Respond to her name when called two of five times.	
Fine Motor	1. Build a tower of four cubes four of five trials. 2. Use a crayon to mark on a piece of paper five of five trials.	
Gross Motor	1. Ascend stairs alternating feet with one hand held. 2. Tuck her head without prompting for tumbling activities. 3. Push a 10-pound weighted cart for 30 feet without running into other objects.	
	Family will	
	1. Attend and participate in the sessions, be on time, and give prior notification of absences. 2. Work with Tina on acquiring the behavioral objectives at home. 3. Participate in group each week.	

Social Worker _____ Physical Therapist _____ Nurse

APPENDIX 1.

Gesell Motor Development Scale: Physical Therapy Evaluation

NAME: _____

BD: _____

DATE: _____

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4 weeks

Supine	1.	Stares indefinitely (*8w)	_____
	2.	Regards examiner; reduces activity (*8w)	_____
	3.	Dangling ring, rattle: regards line of vision only (*8w)	_____
	4.	Dangling ring, rattle: follows to midline, not beyond (*8w)	_____
	5.	Rattle: retains briefly (*8w)	_____
	6.	ATNR predominates (*12w)	_____
	7.	Hands fisted (*12w)	_____
	8.	Dangling ring, rattle: hands clench on contact (*16w)	_____
Prone	9.	Suspended in prone: head drops (*8w)	_____
	10.	Prone placement: head rotates (*12w)	_____
	11.	Prone placement: barely lifts head (*8w)	_____
	12.	Hips held high (*8w)	_____
	13.	Crawling movements of legs (*8w)	_____
Sitting supported	14.	Complete head lag when pulled to sit (*20w)	_____
	15.	Head sags forward (*8w)	_____
	16.	Back evenly rounded (*16w)	_____

8 weeks

Supine	1.	Regards examiner recurrently (*12w)	_____
	2.	Follows moving person	_____
	3.	Dangling ring, rattle: delayed midline regard (*12w)	_____
	4.	Dangling ring: follows past midline (*16w)	_____
	5.	Dangling ring: follows vertically	_____
	6.	Dangling ring: retains	_____
	7.	Head midposition seen (*12w)	_____
	8.	Symmetric posture seen (*12w)	_____
Prone	9.	Head compensates when held in ventral suspension, but not legs (*16w)	_____
	10.	Head to 45° recurrently (*12w)	_____
	11.	Hips low, frog position (*16w)	_____
Sitting supported	12.	Head bobbingly erect (*12w)	_____

12 weeks (3 months)

Supine	1.	Regards examiner predominately	_____
	2.	Dangling ring, rattle: prompt midline regard (*16w)	_____
	3.	Dangling ring, rattle: glances at in hand (*16w)	_____
	4.	Rattle: follows past midline (*16w)	_____
	5.	Rattle: follows vertically	_____
	6.	Hands open or loosely closed	_____
	7.	Fingers, scratches toys (*24w)	_____
	8.	Hand-play, mutual fingering (*24w)	_____
	9.	Hand regard	_____
	10.	Head midposition predominates	_____
	11.	Symmetric postures predominate	_____
Prone	12.	Head midline sustained	_____
	13.	Head to 45° sustained	_____
	14.	Head lowered with control	_____
	15.	Rests on forearms spontaneously	_____
Sitting supported	16.	Head set forward, bobs (*16w)	_____
Standing supported	17.	Small fraction weight borne briefly (*20w)	_____

16 weeks (4 months)

Supine	1.	Spontaneous social smile	_____
	2.	Laughs out loud	_____
	3.	Dangling ring, rattle: regards immediately	_____
	4.	Dangling ring, rattle: arms activate (*20w)	_____
	5.	Dangling ring, rattle: achieves 180° arc	_____
	6.	Dangling ring, rattle: regards in hand and takes to mouth	_____
	7.	Dangling ring, rattle: free hand fingers, holds	_____
	8.	Retains rattle	_____
Prone	9.	Head to 90° sustained	_____
	10.	Legs extended	_____
	11.	One arm flexed, one extended (*20w)	_____
	12.	Rolls to supine	_____
	13.	Ventral suspension: head and legs compensate	_____
Sitting supported	14.	Head set forward, steady (*20w)	_____
	15.	Lumbar curvature only (*24w)	_____

20 weeks

Supine	1.	Discriminates strangers	_____
	2.	Dangling ring, rattle: two-hand approach (*28w)	_____
	3.	Dangling ring, rattle: grasps by completing distance (*24w)	_____
	4.	Rattle: looks after lost rattle	_____
	5.	Lifts legs high in extension	_____
Prone	6.	Arms extend in ventral suspension	_____
	7.	Both elbows extended	_____
Sitting supported	8.	Pulled to sit: no head lag	_____
	9.	Head erect, steady	_____
Standing supported	10.	Large fraction weight borne	_____
	11.	Shoulder tone sustained	_____

24 weeks

Supine	1.	Grasps feet	_____
	2.	Rattle: two-hand approach and grasp (*28w)	_____
	3.	Rattle: shakes actively	_____
	4.	Rattle: reaches after dropped rattle	_____
	5.	Lifts head from platform	_____
	6.	Rolls to prone	_____
Sitting supported	7.	Lifts head, assists when pulled to sit (*36w)	_____
	8.	Sits well leaning on hands (*28w)	_____
	9.	Sits with trunk erect in chair (*36w)	_____
Standing supported	10.	Bounces actively in standing (*28w)	_____

28 weeks (6½ months)

Supine	1.	Brings feet to mouth	_____
	2.	Bangs cubes together	_____
Prone	3.	Persists for toys out of reach	_____
	4.	Circular pivoting (*36w)	_____
	5.	Gets on hands and knees	_____
	6.	Crawls or creep-crawls (*36w)	_____
Sitting	7.	Sits erect about 1 minute	_____
Standing	8.	Stands, hands held (*32w)	_____

32 weeks

Sitting	1.	Sits steadily 10 minutes	_____
	2.	Leans forward, re-erects (*36w)	_____
	3.	Inferior scissor grasp (*36w)	_____
Standing	4.	Holds rail, bears full weight (*48w)	_____

36 weeks

Prone	1.	Creeps on hands and knees (*56w)	_____
	2.	Goes from prone to sitting	_____
Sitting	3.	Sits indefinitely, steady	_____
	4.	Goes to prone with ease	_____
Standing	5.	Pulls to feet at rail (*52w)	_____
	6.	Lifts feet at rail (*52w)	_____
	7.	Scissors grasp (*40w)	_____

40 weeks (9 months)

Sitting	1.	Grasps pellet using inferior pincer grasp (*48w)	_____
Standing	2.	Cruises using two hands (*44w)	_____
	3.	Standing at rail, recovers toy from floor (*52w)	_____
	4.	Lets self down from rail with control	_____

44 weeks

Sitting	1.	Crude release of cube (*56w)	_____
	2.	Places cube into cup	_____
	3.	Pivots in sitting	_____
Standing	4.	Walks with two hands held (*48w)	_____
	5.	Cruising at rail using one hand (*52w)	_____

48 weeks

Standing	1.	Stands momentarily alone maintaining balance (*52w)	_____
	2.	Walks with one hand held (*52w)	_____
	3.	Walks a few steps from object to object (*52w)	_____
	4.	Tosses with slight cast (*52w)	_____
Sitting	5.	Takes pellet with neat pincer grasp	_____
	6.	Releases two cubes in a cup	_____

52 weeks (12 months)

Standing	1.	Picks up objects from floor	_____
	2.	Rises independently, takes several steps (*15m)	_____
	3.	Creeps up steps (*15m)	_____
	4.	Climbs into small chair and sits	_____
	5.	Tosses ball with good cast	_____
Sitting	6.	Releases five cubes in cup	_____
	7.	Imitates scribbling	_____

56 weeks

Standing	1.	Creeping discarded	_____
	2.	Squats in play	_____
	3.	Climbs into adult chair	_____
Sitting	4.	Builds tower of two cubes	_____
	5.	Releases nine cubes in cup	_____

15 months

Standing	1.	Walks alone, seldom falls	_____
	2.	Walks fast, runs stiffly (*21m)	_____
	3.	Walks up stairs with one hand held (*21m)	_____
	4.	Creeps down stairs (*18m)	_____
	5.	Climbs on chairs to reach things	_____
	6.	Hurls a ball (*36m)	_____
Sitting	7.	Builds tower of three cubes	_____
	8.	Spontaneously scribbles	_____

18 months

Standing	1.	Walks down stairs with one hand held (*21m)	_____
	2.	Walks into or steps on ball with demonstration (*21m)	_____
	3.	Follows two-part command to get ball	_____
Sitting	4.	Builds tower of four cubes	_____
	5.	Imitates strokes (*36m)	_____
	6.	Imitates pushing toy (*21m)	_____
	7.	Turns two to three pages of book (*30m)	_____

21 months

Standing	1.	Runs well	_____
	2.	Walks up stairs holding rail; does not alternate feet	_____
	3.	Walks down stairs holding rail; does not alternate feet	_____
	4.	Kicks large ball with demonstration (*24m)	_____
Sitting	5.	Builds tower of six cubes	_____
	6.	Aligns three blocks for train	_____

24 months

Standing	1.	Jumps with both feet off floor	_____
	2.	Jumps from bottom step, both feet at once	_____
	3.	Tries to stand on one foot without holding	_____
	4.	Kicks large ball on request	_____
	5.	Pushes toy with good steering	_____
	6.	Helps put things away	_____
	7.	Can carry breakables without dropping	_____
Sitting	8.	Builds tower of seven cubes	_____
	9.	Aligns four cubes for train	_____
	10.	Imitates vertical strokes (*36m)	_____
	11.	Imitates circular scribble (*30m)	_____

30 months

Standing	1.	Alternates feet going up stairs; does not hold rail	_____
	2.	Rides tricycle using pedals	_____
	3.	Stands on one foot with momentary balance	_____
Sitting	4.	Builds tower of nine cubes	_____
	5.	Adds chimney to train	_____
	6.	Turns individual pages of book	_____
	7.	Imitates horizontal stroke (*36m)	_____
	8.	Imitates circle (*36m)	_____
	9.	Two or more strokes for cross (*36m)	_____

36 months

Standing	1.	Alternates feet going down stairs; does not hold rail
	2.	Jumps distance with both feet together at the same time
	3.	Stands on one foot, 2 seconds
	4.	Throws ball overhand
Sitting	5.	Builds tower of ten blocks
	6.	Imitates bridge with cubes
	7.	Copies vertical stroke
	8.	Copies horizontal stroke
	9.	Copies circle
	10.	Imitates cross

*Pattern replaced by more mature one at later age.

Scoring

+ or ± whenever children demonstrate the behavior pattern.

++ or N (no longer necessary) whenever children fail to display a temporary pattern because they displayed a more mature pattern instead.

– whenever children fail to display a permanent pattern or whenever they fail to display a temporary pattern because they displayed a less mature pattern instead.

A if pattern is present or incipient but abnormal in its expression.

R refusal on the part of the children.

If an assistant device is used to enable the child to perform an item, use (*) and give description of the equipment used.

If children can perform better than half of the items for an age zone, use that age as motor age.

Adapted from Gesell's Scales of Development, 1980.

APPENDIX 2.

NUTRITION FOLLOW-UP DATA

NAME: _____ DATE OF BIRTH: _____

Date	Age	Height (cm.)	Height Age	Weight (kg.)	Ideal Weight (Standard)	% Standard	Feeding Skill Level	Diet

APPENDIX 3.

ROLE OF THE NUTRITIONIST

1. Monitor growth of participants.

   a. Obtain length and weight of new participants by the third week of the session. Plot on NCHS growth charts for file; plot on Down syndrome growth chart for parents.

   b. For all participants, obtain length and weight by the fifth week of program. Plot on appropriate growth charts.

   c. For participants who are more than 15% underweight for length or more than 5% overweight for length, obtain length and weight approximately every 3 to 4 weeks.

2. Evaluate feeding skill development and counsel accordingly.

   a. For new participants, assess level of feeding skill development by the third week of the session.

   b. Formally assess feeding skill development of all participants by the end of the session.

3. Monitor appropriateness of dietary intake.

   a. For all participants, determine the consistency (e.g., strained, junior, mashed, or chopped table foods) of the diet by the third week of the session.

   b. For any participant more than 15% underweight for length or more than 5% overweight for length, request a 3-day food diary from parents. Review diet and counsel accordingly.

4. Attend each feeding session (11-11:45 a.m.) for nutrition consultation. Devote one entire feeding period to each group rather than try to cover all groups each period.

5. Attend postconference session weekly to share new information related to growth, dietary adequacy, and feeding skill development of the participants.

6. During the spring and fall sessions, hold two sessions with parents during the 9 a.m. hour on (1) feeding skill development, (2) growth and nutrition/feeding skills as they pertain to each group.

7. Consult with laypersons and professionals as requested.

8. Supervise nutrition students assigned to EIP.

9. Attend all EIP planning sessions.

10. Participate in the development of each participant's individual program plan.

11. Compile all growth data and feeding skill assessments for research purposes.

Suggested topics for nutrition sessions with parents:

1. Growth expectations for Down syndrome children (youngest group)
2. Feeding skill development (finger-feeding, spoon/fork use, cup use)
3. Food acceptance
4. Preschool nutrition, food preferences
5. Creative food experiences (older group)
6. Mealtime behavior problems
7. Food substitutions with each food group
8. Question/answer session to discuss problem areas (older group)

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